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# MOTOR AGE

Volume XXXIX  
Number 6

PUBLISHED WEEKLY AT THE MALLERS BUILDING  
CHICAGO, FEBRUARY 10, 1921

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## MOTOR AGE

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*Jobbers—Order today and be prepared to supply the demand.*

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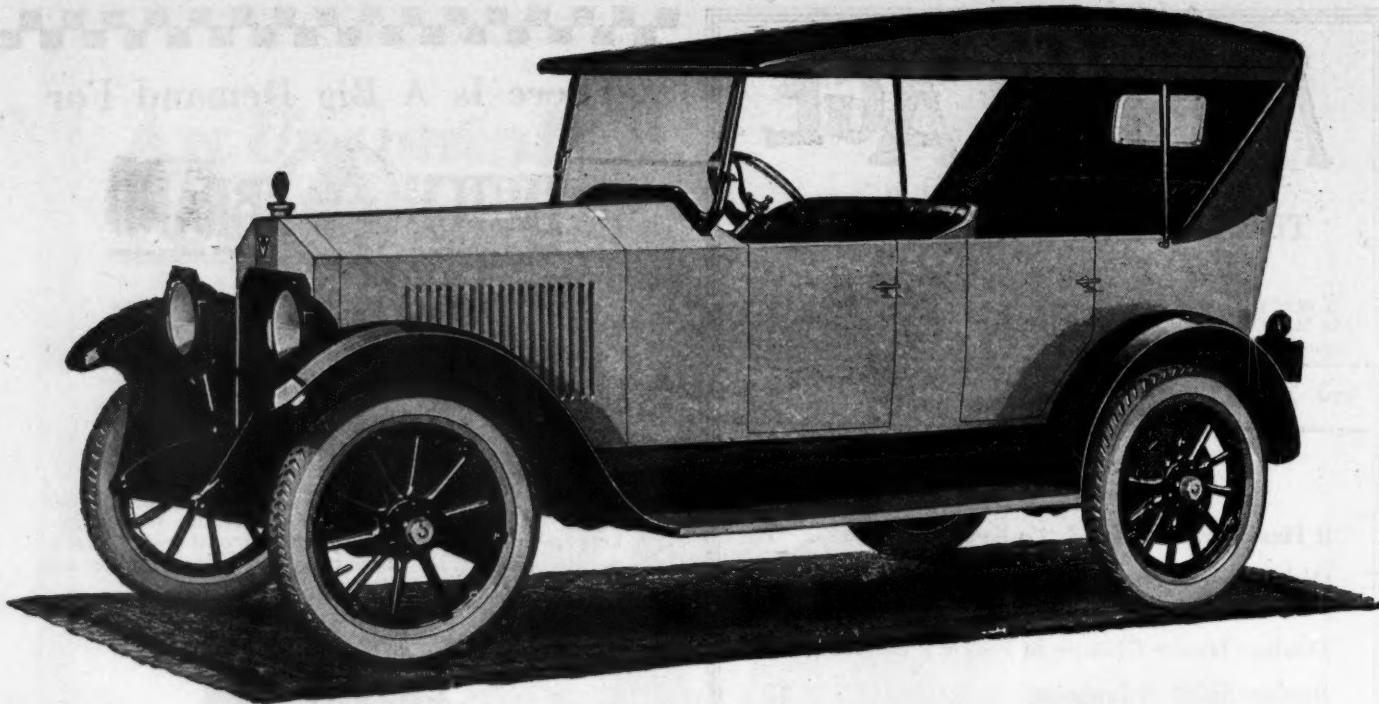
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# More Business Is Being Done on this Velie Six

Than even the most optimistic anticipated. Right through the slump of last Fall and early Winter Velie Model 48 sales showed what a splendid reputation it had built in the hands of thousands of owners. It opened the season of 1921 with a popularity seldom achieved by any car. Its position is being strengthened every day. Thousands come to see it. It has insured Velie dealers not only a normal business but a *better business*. Why?

Because at its low price it shows all the real high grade values that are looked for only in highest-priced cars.

**7-R Red Seal Continental Motor** —the best motor the Continental ever built; with the internally-heated vaporizer burning low-grade fuel. Four-bearing crank shaft—enduring bronze-backed bearings everywhere—Timken axles front and rear—Borg & Beck clutch—Bijur starting and lighting—every part of like grade.

And with these are the values in engineering and design that have given

the Velie cars their unchallenged reputation for the last 11 years.

Go over this car. Ask yourself what more or better materials or workmanship you could specify, if you were designing a car, regardless of price.

#### Economy and Style

It is the car for the market in its 1921 buying mood. Its remarkable motor is showing what can be done in extracting more miles out of the fuel we are getting. Its design is the foremost example of the modern style tendency.

It is the *genuine* car all the way through. Built to last. With construction features *underneath* the paint and upholstery that we are proud to show you—fine curled hair and genuine leather—the Velie lasting mirror finish—everything in equipment and everything of the best.

#### How About Your Territory?

With a close-up critical view, you will understand why this Velie maintains and *makes* business for Velie dealers. If your territory is not closed write us.

**REMEMBER**—In these days of rapidly changing conditions the Velie's stability and sound financial position makes the Velie agency doubly desirable. It insures permanency for your business, your cars and your customers.

**Velie Motors Corporation, 113 Velie Place, Moline, Ill.**

The 1921 Velie line numbers eight models. The model 48 series, known everywhere as "the Cars of Authoritative Style," includes the new Seven-passenger Touring, Sedan, Speedster and Five-passenger touring car illustrated above.

# Velie

The smaller Velie Model 34 series includes the Five-passenger Touring car, Sedan, Coupe and Roadster. A car for every need or preference. With the Velie line you command your market.

# MOTOR AGE

## It Has Started to Go Let's Keep It Going

**F**OR several years it has been inevitable that there should come a temporary let-down in motor car and truck sales. The period of low sales and production through which we have passed has not been a surprise.

It has also been inevitable that the period of low sales should pass. As we went down, so must we come up. At present we are on the way up, and the motor shows in the various cities are proving as successful as was anticipated in giving business a good start.

If the shows were not held the business would gradually come back—sometime. All business must eventually return in good volume and the prosperity of the country must be greater than it has ever been before. If the business of the country did nothing but wait there would be a return to buying.

The show is a great effort and has a great result. It always causes a peak in business. The business at the shows—and caused by shows—may be greater than in the month following the shows, if things are allowed to take a waiting course. But if the dealers in every city where a show is held will get an intensive sales plan into operation and make a mighty effort during the two months following the shows, the show selling should continue without much cessation.

An important step in such a plan is this: When the prospects secured at the show have been nearly worked out, get ready to secure more prospects, to advertise, to comb the field and to take every possible step for making sales, even going to the extent of ringing doorbells in selected sections.

The shows developed a certain number of prospects, and eventually they will be worked out. If the sales territory is not yet ready to come back of itself there must be prospects for working between the time the show prospects run out and sales would normally come back. Keen attention should be paid to this interval, and if such attention is paid there should be a continuously growing business in each city following each show.

# Disk Wheels Show Gain at Both National Exhibits

*Marked Preference  
Being Shown  
by Public  
for Such Types*

ONE of the distinctly noticeable trends at the show this year is the adoption of disk wheels to the cars on exhibition. Also the rapidly increasing demand for cars equipped with disk wheels leads one to inquire as to the permanency of this institution which has been in existence for a few years. To answer the question we have to consult the records of the achievements in wheel construction made since the inception of the motor car.

From the very beginning of the American motor industry through to the year 1912, the wood wheel was used as standard equipment on all the cars made. In the year 1913, up to which time, the wood wheel's right was to monopolize 100 per cent, the wheel equipment business was challenged by the wire wheel with the result that on 3 per cent of the chassis models the wire wheel was used. Since that time the wire wheel has continued a steady growth until today it is used as standard equipment on about 14 per cent of the chassis models.

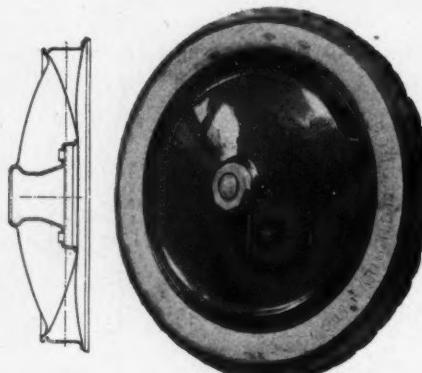
However, the wire wheel was not destined to remain sole challenger of the wood wheel, for shortly after the successful triple spoke motor car wire wheel was designed the disk wheel was introduced in France and then an American manufacturer a short time later introduced the disk wheel here. The disk wheel has been before the public but three or four years now and its general adoption as regards numbers of manufacturers while not as large as the wire wheel users compares favorably with the



The Disteel wheel is one of the first disk wheels to be offered the American motoring public

latter when the optional choices are considered.

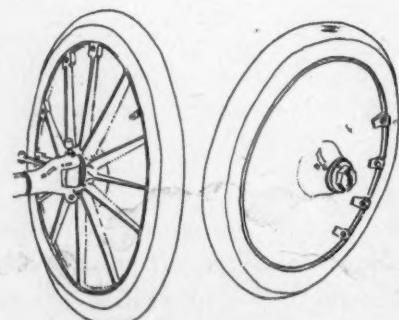
It is true that a comparison of wheel applications based on the numbers of chassis models and extended over a period of years shows the wood wheel up in an unfavorable light. Despite the fact that there has been a 36 per cent decline



The Harvey wheel which in reality is a wire wheel with an infinite number of spokes is a triple disk wheel. It has a light peripheral weight and in fact its construction insures lightness in general



The Dayton wheel has a disk of laminated wood. The old rim of the wood wheel is used in conjunction with it



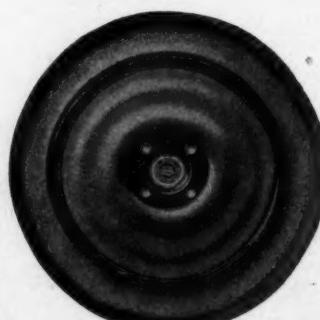
The Parker wheel is of cast aluminum and is now standard equipment on the Franklin. It is smooth on the outside and its inner surface has twelve radially cast fins

*This Article an Interesting Study of Their Construction*

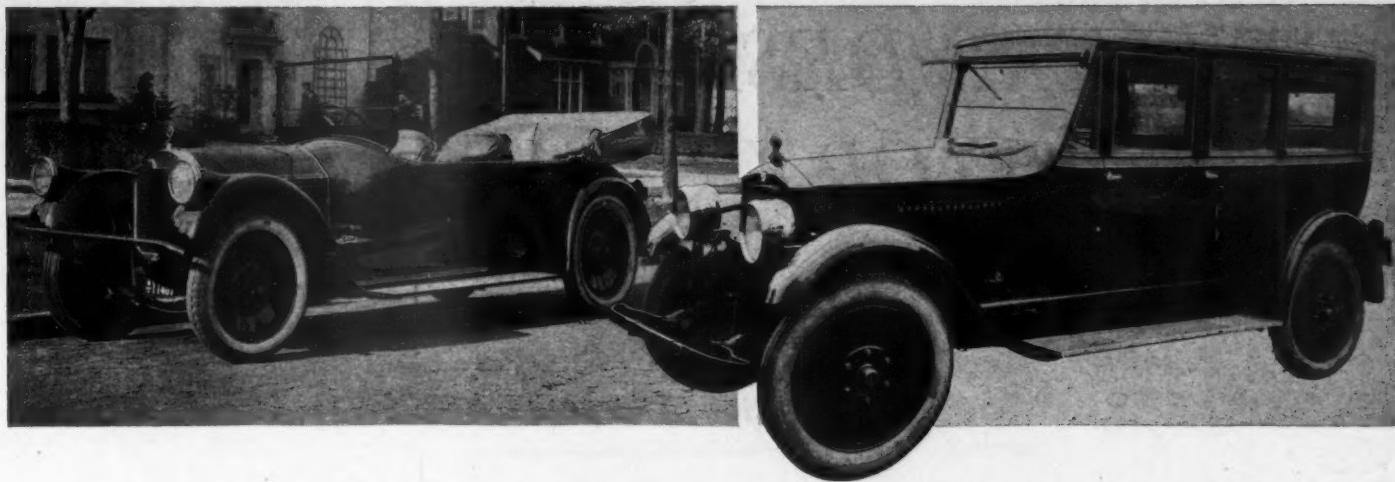
in the usage of wood wheels since 1912 (based on numbers of chassis models) the actual quantity of wood wheels produced in point of production is ever on the increase. The year just past saw 1,148,049 cars made. We are not aware of the exact numbers of these cars equipped with wheels other than wood but if only a few of the large production cars are considered such as Ford, Chevrolet, Dodge, Buick, Overland, and others, all of which are wood wheel equipped except the few special cars that dealers fit up to suit customers' requirements, we reach a total of over 1,750,000 calling for more than 7,000,000 wood wheels a year. Thus it would seem that the wood wheel continues to be the dominating type; but the favor which the disk wheel is finding in the eyes of the public is a subject worthy of inquiry. At the New York show 58 cars were shown on disk type wheels which is approximately 100 per cent increase over the show of last year. At the Chicago show just closing 61 cars were shown with disk type wheels. At the Salon ten cars were shown fitted with these wheels. The figures given include the hotel exhibits.

One instance which shows the disk wheel is gaining greater and greater favor in the eyes of the manufacturers is the adoption of this type of wheel by a certain manufacturer. The wheel of his car was designed by himself and is built in his own shops. The car will be announced to the public shortly.

A search through the records of car sales made at the Chicago show brings



This is the Cushnsteel wheel, formed from a single disk having a corrugated or wave section pressed in it. It is demountable at the hub



The Disteel wheel applied to this Pierce-Arrow seems to blend harmoniously with the car's lines and contours. The Michelin wheel is applied to the Studebaker sedan shown at right. This wheel is now furnished by the Studebaker company.

out some salient features regarding the public's consideration of the disk wheel. If the records and reports are correct, and we have no reason to question their accuracy, just as many cars were sold with disk wheels as with any other type. One dealer reported that he was selling three cars with disk wheels to one with other equipment, and this despite the fact that \$165 extra was charged for the disk wheel equipment. This is with a moderate priced car where wood wheel is standard equipment and the disk may be had at option. A peculiar characteristic of human nature is noted though in the report of another dealer handling a very high priced car whose wheel equipment is optional with wire, wood or disk, and no extra charges whatever the choice. It seems to be a fact in this case that the purchaser is inclined to choose whatever equipment is on the car, a probability that would no doubt be modified were an additional charge made for an especially selected equipment.

#### The Public Not Technical

The public is not technical and therefore the public's demand for disk wheels cannot be based as springing from blue print and specification desire. The public is susceptible to and easily swayed by proof argument based on semi-technical demonstration, but that is about as far as its discerning ability penetrates. The strength of the disk wheel is a factor very easily appreciated.

The choice arising from the enhancing of the car's appearance is without question the essential factor influencing the public, although this cannot help but be a personal consideration. What sometimes is pleasing to the eye of one is not so to another and so one finds the wheel situation. Recently in Chicago the Yellow Taxi Cab system equipped a large number of its cabs with Disteel wheels. If the writer stated that he felt the appearance of the cabs was improved with this equipment it would carry very little weight for this would be but an expression of one individual; however, when the same opinion is heard from everyone familiar with the appearance of the cabs

one feels that there must really have been an improvement in appearance.

The question of weight of the disk wheel is one that is uppermost in everyone's mind. Because of the fact that the disk wheel is solid and that one is unable to see through it, it is natural to assume that this type of wheel is very heavy. Since a wheel is carried below the springs its weight is termed "unsprung weight." The effect of one pound weight added below the springs of the car is equivalent to four or five pounds added as sprung weight. Therefore, any great addition in the weight of the wheels would be immediately noticeable in the riding qualities of a car.

#### Effect of Peripheral Weight

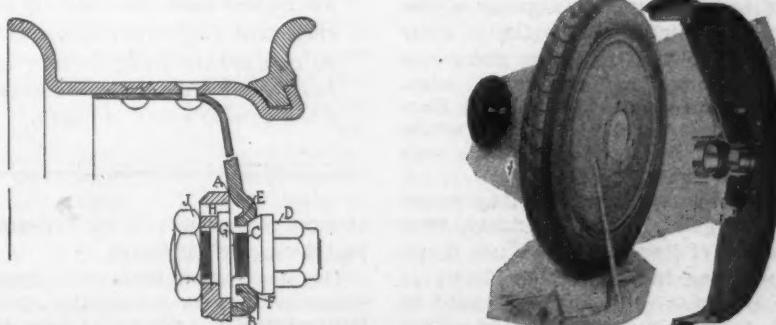
The peripheral weight of a wheel is another important consideration. Two wheels may weigh 40 lbs. each but one wheel, due to a concentration of weight at the hub and the other with its weight concentrated at the rim, would exhibit marked differences in the handling of the car. The wheel with a large hub and a light rim will not have the fly-wheel effect that a wheel with a heavy rim will have. In brief the effect is one of difference in the radius of gyration. The writer has had the opportunity to drive two different chassis one fitted with a light rimmed wire wheel and the other

with a heavy rimmed wheel, and the difference in the acceleration and braking of the car was very noticeable. However, if the heavy wheel had been of a size that was designed for the car instead of having capacity sufficient to support a much heavier car the effect doubtless would have been unnoticeable.

#### Weight About the Same

As regards the specific weight of a disk wheel, it is difficult to obtain exact figures on the subject, but in general the wheels weigh the same or less than wooden wheels for cars weighing over medium weight and slightly more for the lighter cars. There are exceptions to these figures of course. On cars where the disk wheel has been adopted as standard equipment and where the disk wheel manufacturer has had opportunity to work out the requirements for the car the disk wheel can be suited exactly to the car. In cases like these the light cars may have a disk wheel that will be just as light as the wood wheel it replaces. A few of the companies making disk wheels are now announcing light weight models for the Ford car and other small cars of large production.

One type of disk wheel that seems to have some very commendable features is the aluminum disk. Because of its extreme lightness it can be easily handled.



Here is a cross sectional view of the Michelin wheel which is of the convex type. Note how this disk also tapers. The driving means is designed to eliminate any strains from the studs, the force being applied to the surface of the disk. Right: Disassembled view of the Michelin wheel

# DEALERS DESIRE CHANGE IN FACTORY CONTRACT

*They Ask Manufacturers to Participate in Joint Committee Meetings to Consider General Conditions—  
Invitation Accepted*

**C**HICAGO, Feb. 2.—Recognizing that the entire automobile industry, to meet the intensive merchandising period at hand, must get set in every detail, the National Automobile Dealers' Association, at its annual meeting the first half of this week, took up the question of the factory-dealer contract, concerning which there are some points which do not entirely satisfy the dealers.

In order that the dealers may enter into the hard work that is ahead, it is their belief that all contract details should be made equitable, leaving the trade with a clear mind for the pursuit of business. The discussion of the subject terminated in the authorization of the appointment of a committee of the dealers and an invitation to the National Automobile Chamber of Com-

merce to name a committee for joint consideration of general conditions.

Points that developed include cancellations of contracts, factory guarantees and service on defective parts, territorial representatives of the factories and shipping of cars to dealers in periods when they cannot handle them.

The subject was opened by President Harry B. Harper. The first word on the subject was a letter to the N. A. D. A. from C. W. Nash of the Nash Motors Co. in which he stated that many of the industry's practices should be revised. Following this, Robert J. Schmunk, vice-president and sales manager of the Peerless Motor Co., expressed similar sentiments. The statements of both Mr. Nash and Mr. Schmunk are printed on the following pages.

**F**OLLOWING these messages from leading manufacturers, the meeting was thrown open for discussion, but it was some time before the reserve of twenty years on the part of the dealers lowered itself to such an extent that members talked freely on the floor. The situation was admirably handled by President Harry B. Harper, himself a former sales manager, and when the discussion did finally get under way valuable information on the subject was developed, the discussion terminating in the authorization of the committee and the invitation to the manufacturers to co-operate.

#### Analyzing the Territory

The convention listened with keen attention to a presentation by L. E. Hooker and William Livingstone of the Burroughs Adding Machine Co. of their corporation's plan of analyzing and measuring territory for prospective sales. After they were through President Harper announced that the N. A. D. A. would try to develop for its members this year a territorial analysis system.

The Burroughs plan is first to ascertain the population of a territory, then the number of its machines in use there. Each machine in use is considered as having a definite value to the company of \$50 in making additional sales. This value, \$50, multiplied by the number of machines in use, gives the company its quota for the next year in each territory. The company also has worked out the

#### N. A. C. C. Wishes to Work With Dealers

*A MEETING of the National Automobile Chamber of Commerce was held Wednesday, when the invitation of the National Automobile Dealers' Association was presented. At this meeting the manufacturers accepted the invitation of the dealers to formulate a joint committee for the purpose of discussing general conditions. The manufacturers expressed keen interest in the general situation and expressed a desire to co-operate fully in any work beneficial to the business of both makers and dealers.*

amount of business to be expected each year from each industry.

The convention made two appeals to Congress, one to defeat the attempt of Representative Anthony to pave the way for sale of several thousand motor trucks in the hands of the War Department and the other for economy in government expenditures. The Anthony bill, it was

pointed out, would overrule the plan to turn the surplus army trucks over to federal and state departments for highway work in favor of a move to dispose of the trucks at prices which would represent a small part of their value for road construction work.

Another resolution pledged to President-elect Harding the support of the association in his expressed declaration to work for more business in government and less government in business.

Still another, calling attention to the inadequacy of small town bank support of farming interests in some sections of the country, called upon bankers to provide the finances necessary for purchase of farm machinery, trucks and tractors.

#### Avoid Long Trades

Motor truck dealers who expect to remain in business will have to confine themselves strictly to selling at a profit, whether the commodity sold be new trucks, used trucks, equipment or service, in the opinion of dealers who attended the round table conference presided over by L. H. Cartinhour of Indianapolis. It was agreed that the curbstone dealer would be eliminated more rapidly by letting him stand the losses of long trades than by attempting any sort of suppressive action.

Dealers reported trades in their cities on which competitors had allowed as high as \$1,500 on used trucks which they appraised at \$300. Most of the men present said they had been refusing business

right along because of conditions of this sort and it was unanimously agreed that it was good business to continue along this line. There were reports of long traders going out of business here and there and while it was admitted that there is no possibility of eliminating entirely the shyster in the truck business any more than in any other business, there was evidence that his numbers would be fewer if he was allowed to hold the bag on foolish trades.

There were some complaints of direct factory sales over dealers' heads, in some cases with long trades engineered by factory representatives, but there were reports, too, of manufacturers who had been doing these things going definitely into the idle plant class.

## 1921 Officers of the N. A. D. A.

*President, Jesse A. Smith, Milwaukee.*

*First Vice-president, William L. Hughson, San Francisco.*

*Second vice-president, W. J. Brace, Kansas City.*

*Treasurer, F. W. A. Vesper, St. Louis.*

### DIRECTORS ELECTED

*A. J. Shorey, Boston.*

*Guy Simons, Detroit.*

*P. H. Greer, Los Angeles.*

*Tom Botterill, Denver.*

Another address which held the closest attention of the dealers was a discussion by Wayne Hearn of the principles of business success. Hearn outlined the ideal automotive merchandising organization, as he saw it, and then took up the question of selling.

### Co-operation the Keynote

President Harper closed the meeting with a statement that the need of business today is hard work and plain honesty. Before he surrendered the chair to the new president he was presented a jewel in behalf of the membership. President Smith, in his address, sounded the keynote of co-operation, among dealers and between dealers and manufacturers.

## The Dealers' Invitation to the N. A. C. C.

THE National Automobile Dealers' Association in fourth annual convention assembled in Chicago, extends greetings to the organization of manufacturers and herewith conveys the declaration of our members that they will put forth every energy possible upon their part to gain the maximum distribution of motor vehicles in 1921. We herewith declare that while it may not be possible to exceed the year 1920 in results it will be possible to exceed 1920 in effort.

Discussions at our sessions to-day and yesterday developed upon the whole expressions of utmost friendship of dealers for their manufacturers and hope was expressed that the pleasant relations of the past may be continued. It was also pointed out that in this period of reconstruction through which all business is passing certain past practices in the automobile industry need revision and adjustment and it was the expression of the dealers that the joint efforts of dealer and manufacturer might be centered upon those practices and conditions for the improvement and increased prosperity of the industry as a whole and to each and every part and factor of it.

### Joint Committee Recommended

We believe that in addition to the direct contact between each dealer and his own particular factory, which, of necessity, must be for the selfish purpose of increasing the profits of the manufacturer and seller of that particular line of merchandise, there should also be provided, possibly by appointment, a joint committee of the National Automobile Chamber of Commerce and this Association, to take up the various points of discussion between dealers and manufacturers generally. This procedure, we believe, would provide the machinery for non-partisan, unbiased discussion of practice that could be improved upon or abandoned, and enable the entire industry to present a united front to other industries and institutions who now question the legitimacy of our position in the financial and industrial world.

Past relations between the National

Automobile Chamber of Commerce and the National Automobile Dealer's Association have been of the utmost harmony. Great good already has been accomplished for the industry by the close co-operation of the two bodies. We believe that the selection of some such joint committee as suggested in this communication would provide the machinery for

the development of the greatest co-operation between dealers and manufacturers.

We respectfully request that a copy of this communication be laid before each member of the Board of Directors of your association and by them before your membership.

We again affirm our intention of making 1921 a selling year.

## Schmunk's Opinion of Dealer Relations

*An Address Delivered to the N. A. D. A. by the Vice-president and General Sales Manager of the Peerless Motor Car Co.*

I HAVE been engaged in the automobile industry for over twenty years. Most of the time has been spent in the capacity of a sales executive. With the exception of a year it has been with the manufacturers of automobiles. In the past fifteen or sixteen years I have had as wide an opportunity to study the methods employed by various manufacturers in their relations with the dealers as perhaps any one has, and in that same process I have been enabled to formulate a policy of my own in which I have always taken great pride. I am so thoroughly satisfied with the policy we are employing in our relations with our dealers that it has always been a source of genuine regret to me that some such policy as that employed by us and by other good and reputable manufacturers is not more generally employed by all the manufacturers. I know what you fellows are up against from time to time. I know of some of the methods employed by certain manufacturers. It is unfortunate that any of them should exact the requirements of you as dealers that they do. There seems to be an utter lack of appreciation on the part of the manufacturers, that is, a few of them—and I say this with the knowledge and the understanding that it may become public property—of the deal-

er's worth; he doesn't seem to be worth a d— to them; their interests come first. They seem to lose sight of the fact that aside from the production of a mighty good automobile their whole success depends upon inspiring confidence and getting close to the dealers and organizing and working with them with a view to permanency. I can't understand what they are thinking of.

The two biggest objections that I understand now exists in the minds of the dealers and that I have always questioned the wisdom of are the question of exclusive representation and the so-called strong-arm method of ramming cars down dealers' throats during periods when they know that they can't handle them advantageously. On the question of exclusive representation, for my part I cannot understand what these fellows are thinking of to go to a dealer who in many instances perhaps invariably has invested thousands of dollars in building up a clientele, in putting up buildings and providing facilities and organizing to introduce some reputable make of automobile, and demand, "If you handle that line you are going to lose mine." I don't see the fairness of it. We have never done it and we never will. The greatest wonderment to me is that you

fellows have stood for it the way you have.

Our business had got to a point where it means conservatism, where it means co-operation, where we have got to conduct it in the most economical possible fashion that business ingenuity can invent, and it follows, therefore, that when a dealer elects to take on more than one line, I believe it is proper that he should have one extra line at least to fall back on so as to cover the overhead and carry him along.

In the case of loading dealers up during the dead months of the year with an excess stock of cars, I am more surprised than anything else at the attitude the dealers have taken and the ease with which the manufacturers have got away with it. We never employed that doctrine. I know several other concerns that did not employ it. I know that it is their policy to go to the dealer, inspire the faith and confidence to enable the manufacturer to get together with him on a mutual basis, agree between them what in their judgment is fair and reasonable for a dealer to carry during the dead months, and then he carries the number of cars agreed upon. I think that it is insurance in good business that a dealer should carry at least sixty days' supply. That is fair enough. Every dealer should be willing to do that; in fact it is necessary that he should in order to protect his interests and safeguard his opportunities when business breaks.

I came up here at somewhat of a handicap because I was not aware that I was expected to speak to you today. The subject which has been assigned to me I have been unable to give very great thought to as far as preparing it in the form of a speech. I only want to refer again to these things that I think are necessary in the interests of the manufacturer and the dealer, and that is a

closer relationship, a greater spirit of co-operation. You must bear in mind that you, too, are in a position when you can, through your co-operation and the spirit that you evidence, bring about a condition that will make the manufacturers perhaps a little more inclined to work with you. There are many mistakes made, there are many ills that you are suffering from that the manufacturer is required to impose regulations to cover that are the result of carelessness, lack of interest, lack of co-operation, on the part of the dealers, not as a whole but on the part of those unscrupulous ones.

Just a word as to the outlook, as I see it, for the ensuing year. We hear a great deal about optimism and I think I am about as familiar as any one selling goods with the value of preaching optim-

ism and the psychological effect it has, but we have got something else beyond optimism that we have got to preach, fellows. We also hear along with this story of optimism the suggestion that we have got to get the working man down to brass tacks and get him to produce an honest day's work. We ourselves have got to do the self-same thing. We have got to reconcile ourselves to the thought that we are going to have to get down and buckle. I don't mean to suggest for a single moment that the automobile industry is gone or there is never any possibility of making money out of it and building it up. There is just as great an opportunity to make money out of it as there ever was in the history of the business if you will just understand that you have to organize and get down to work.

## Dealer Organization Most Important Says Nash

*This letter, written when Mr. Nash found he could not get to the meeting to deliver an address, was read at the annual meeting of the N. A. D. A.*

I DON'T believe that the dealers' organization attaches sufficient importance to the part they play in this great industry. I want to say to you personally that to my mind the dealers' organization is twice as important as the manufacturers' organization, and I believe also, as a whole, that the dealers have not received the consideration to which they are entitled at the hands of manufacturers.

"The trouble in the past has been that a dealer's connection has been too easy to secure and the manufacturer, in many cases, has forced the dealers to carry too much of the burden.

"I believe the time is fast passing when a manufacturer will say to a dealer, 'You

have a schedule calling for so many cars in the months of December and January, and if the dealer replies that he is unable to finance the proposition he is told in many cases by the manufacturer that if he did not find ways to take his allotment they would cancel his contract. This to my mind has been unfair treatment toward the dealers and I don't believe it will long continue.

"As a matter of fact, I am proud to say this has not been my policy and never will be. I think the time has arrived when the manufacturers and the dealers should consider themselves as partners and should conduct their business along partnership lines in so far as aiding each other as much as they can at all times."

## Battery Dealer Says—Educate the Consumer

THAT the coming spring will see the development of strong and effective education among users by the dealers in storage batteries, is the prediction of Michael Ert, head of the Willard Service Station, Milwaukee, and he further says that this is the biggest and most important as well as necessary job of the battery man at this time.

"When business is quiet is the time for the battery man to plan ways of getting in close touch with the car owner and to advertise extensively," said Mr. Ert.

"Let no dealer fool himself," he continued. "The dealer is, to a great extent, the man who is responsible for the attitude of the average car owner. Everyone admits that the 'consumer' needs education. Only the wise dealer admits that if the consumer lacks this education, it is the dealer's fault.

"If the dealer will only take advantage of the national advertising of the battery manufacturers, he will accomplish much.

"We dealers might as well be frank and put it down definitely and con-

clusive in our minds that a two-year guarantee on a storage battery is an unsound, and really an unprincipled proposition. This is the secret of practically all of the evils in the battery business.

"First of all a dealer should not feel that he must make a sale 100 per cent of the time, and secondly that he must get every service job that comes his way.

"Teach the car owner to use his battery carefully and have it looked after properly, and we will all have more business than we can do.

"Many dealers forget that they have a still further responsibility and that is to the electric system of the car. How can you divorce the two?

"Even now, with many owners using their fourth and fifth cars with electrical equipment, I still am convinced that the slogan of every battery man should be to continually impress the customer with four words. The words are: 'Don't Forget Your Battery.'

"This time of the year is when thousands of batteries begin to ride the road

to ruin, especially in this climate, because the car owner as a rule forgets the battery. It's not as much in evidence as other parts of his car, and he just overlooks it.

"He doesn't realize that the battery is an accessory, and is unlike the frame of the car or the seat cushions, or the clutch and brake pedals. He suddenly finds that the car won't go, and if this is due to battery trouble through neglect, only then does he awake to the fact that he has a storage battery.

"I get splendid results from placing advertisements into automobiles. I play up the point in every case, that the owner should remember his battery. I try to put a jolt in it. I endeavor to make it simple for the owner to do the things he should do, which chiefly is to come in or let us call for his battery.

"It is always wise to impress the owner with the fact that proper attention to the battery will not inconvenience him. Make that clear in every case, and regulate your service work accordingly."

# Buying Spirit Advancing

*Results of Chicago Show Indicate That Public Wants Cars—Greater Attendance and Many More Live Prospects Obtained Than a Year Ago*

**C**HICAGO, Feb. 5.—The New York automobile show established the fact that the buyers had turned to the market. The second national show held in Chicago during the past week further proved it. Shows which had been held in other cities in the intervening time likewise bore evidence to it.

With reference particularly to Chicago, buying has returned to a city where little real business has been transacted for the past two months and it has returned with great enough vim to lead the dealers to believe that with continual, effective pushing it can be carried on through the year—or at least until business conditions which vitally affect the automobile market can be finally readjusted.

From every standpoint of the distributor and dealer the Chicago national automobile show was a success. While the actual retail sales made on the floor were not as great as during the same period a year ago, reaching possibly 66 2/3 per cent of that figure, the great attendance and the unusually large number of live prospects obtained fully justify the optimism which the selling organization felt from the time the doors of the Coliseum and First Regiment Armory opened until they closed a week later.

**B**EFORE the show opened distributors and dealers regarded the success of the exhibit as dependent almost entirely upon the attitude of the public as evidenced by their interest and not by the signing of contracts at the booths. There was an unprecedented volume of selling a year ago because conditions then were widely different from what they are this year. It was a matter of course then that a buyer would step into a booth, speak to a salesman and without any other lengthy formality conclude a purchase. The public this year is a changed public. It is an investigating public. It wants to be shown. It is a public that needs to be convinced. It is not buying haphazardly.

#### FEWER COUNTRY DEALERS

The paid attendance, despite unsettled weather conditions—a few days of rain and other days that were threatening—was 18 or 20 per cent better than last year. With the exception of the opening day all admissions were paid for. The booths were so crowded the middle of the week that it was impossible for the selling organization to do really effective work, and such discussions as were started were postponed for continuance in the salesroom later on.

The crowd as a whole was not prompted by curiosity. Its interest was healthy and wholesome. It was not a crowd that was out on a lark—it had a definite purpose in going to the show. It was essentially an attendance of car owners. There were of course people who never had owned a car and had come to the show to look things over but they were in the minority.

There were comparatively few buyers or prospects, as compared with last year, from the rural districts embraced in the Chicago distributor's territory. The number of country dealers showed a slight decrease. Those that came were filled with the confidence and optimism that permeated the show and this will tend to increase their determination to instill new life into their business when they return home. Dealers who did not

come have fallen into the state of mind revolving about depressed conditions at home; the farming districts shout—no business—and as a matter of course the dealers assume that there is no business. Selling campaigns will shortly be projected by Chicago distributors to bring the dealers in the country to a different way of thinking. One distributor cites two cases to show what can be done with efforts properly directed and properly made. In a town of 18,000 the dealer through his assumption that business was flat and would have to revive itself has made practically no sales at all. In a neighboring town of 5,000 the dealer looking at conditions differently was able to transact several sales weekly. It was all in the matter of the state of mind. Generally speaking, the country dealers were very optimistic but placed few orders.

#### HESITANCY AMONG WAGE EARNERS

Running down the prospects gathered at the show, properly assorting them, finding which are productive and which have changed their minds since they placed their names and addresses in the hands of the distributor or dealer will probably consume two months. That will bring buying up to the season where purchases as a matter of course should increase. Summer will then be on, but after that dealers see no light ahead without the hardest kind of work. It will take real salesmanship to win a prospect over when he has placed his name on half a dozen lists and it will take equally hard work to continue to make sales after the first gush of the summer season is past. Business is not going to knock at any man's door. It will have to be gone after. There is business as the show demonstrated but it is not obtainable willy nilly.

**D**EALERS feel both from the out of town attendance of prospects and dealers that business in the agricultural states inclusive of Illinois will continue to remain in a quiescent state unless real merchandising efforts are brought into play. In spots there already appears to be an easing up among the farmers. Every day brings the crop producer a day nearer to the time when he will feel more disposed to let go of last year's crop regardless of what the sacrifice may mean for him. He has been holding off for higher prices for many months; he has struck just as the buyers have struck. Financial pressure by the banks is likely to cause grain selling soon.

In a number of instances the matter of price was spoken of by the prospect but this did not figure very materially in the discussions at the booths. General business conditions affected in a large measure the sale of cars that would be bought by the wage earner. These usual purchasers are not exactly steady on their feet as yet; they are not settled in their own minds that the readjustment going on will not affect them. They do not know when the axe will fall, if it will fall at all, and they will be called upon to reserve their surplus funds. The buyers of the higher priced cars have pretty well established positions, and while the purchasers of the moderate-priced cars are to a certain extent concerned in readjustments they are not affected as deeply as are the lower-priced car buyers. The feeling of hesitancy has taken hold of these latter more than it has of the other two classes. They all want cars, there is no question about that, and eventually they will buy them. Some prospects discounted the oft-repeated statements, borne out by those production schedules already made for the present year, that there will be a shortage in the spring. One man, who evidently did not buy last year or attempt it, stated that there never had been a shortage of cars and there never would be.



The trainload of tractors on its way from the factory to towns in East Iowa covered by the East Iowa Hart-Parr Co.  
Heading this caravan were coaches carrying enthusiastic dealers, farmer prospects and farmer tractor owners

# Tractors Being Sold By the Trainload

*Hart-Parr Co. Performs the Impossible by Sending One Hundred Machines to Denver One Month and a Like Shipment to Cedar Rapids, Iowa, the Next*

By WARREN BAKER

**I**S there life in the tractor industry? Can sales of tractors be made at this time?

Some say not; some say so. The Hart-Parr Co. says there is life and that sales can be made. In December it contracted with the distributor at Denver for a trainload of tractors, 100 machines in all. A few days ago it shipped another load of a like number to the distributor at Cedar Rapids, Iowa, a short distance from the factory at Charles City.

It sent this last shipment in one lot across the rich, fertile corn-growing country of Iowa to carry the same message along the route that the Denver allotment had

The elements behind their efforts were these:

**CONFIDENCE**—In the tractor industry and in the particular machine being marketed.

**PERSISTENCE**—"If those who market tractors," the manufacturer says, "will persist in their sales efforts, calling intensively and repeatedly on prospects, even though they do not make a sale at present, in the long run when sales do break loose, those sales are bound in the nature of things to come to that organization which has stuck and kept the

borne to farmers on its cross country ride a month before.

If Denver can sell a trainload, the East Iowa Hart-Parr Co. at Cedar Rapids felt reasonably sure that it could do equally well. Distributor, dealers and salesmen took off their coats, rolled up their sleeves and stopped the hands of the clock. They went to work. They saw every farmer in the thirty counties in the distributor's territory, whether he owned a tractor or not. If he owned a tractor of some other make he was a prospect just as if he owned none at all.

name and quality of their product before the prospective buyer."

**BUSINESS IS WHAT WE MAKE IT**—A slogan that embodied both confidence and persistence.

The result of the business-is-what-we-make-it attitude was an order to the factory for 100 tractors—a trainload of them.

While in other parts of the country they were saying that the tractor business was flat, out of Charles City were going in two months' time two hundred machines—two impressive trainloads.

Of the Cedar Rapids consignment some had been sold by the dealers before delivery and such live prospects had been lined up as to give assurance that a good part of the remainder would be taken. And they were.

At this point—when the prospects were in line—the manufacturer stepped in. He came with an experiment and the experiment went across far exceeding expectations.

"Bring your prospects to the factory. Let us take them through it and show them the making of a tractor from the time the raw material is put into the

furnaces until the tractor is assembled and hoisted on the train ready for delivery. Let the manufacturer, the distributor, the dealers and farmer prospects sit in convention together and talk over their problems."

The distributor, the dealer and the salesman had done their part of the work. The factory gave the final punch.

Here was a movement by a tractor manufacturer to become a vital, integral part of the selling organization.

It went over big.

When the meeting was adjourned after a two-day session actual results began to show. Contracts were being signed.

Around about dinner time of the last day the aggregation moved down to the railroad station to meet the Chamber of Commerce and Rotary Club members who arrived just as enthusiastic as the prospects and farmer owners had been.

The great wave of enthusiasm was growing. The movement of the tractor manufacturer to become a part of the selling organization was having its effect. More contracts were signed at the hotel after the banquet.

#### THEY BEGIN TO SIGN CONTRACTS AFTER CONVENTION

The farmer buyers took the tractors back home with them. The coaches that carried them were joined to the trainload shipment and they started off for home. The shipment of 100 tractors across country to Denver had indicated to the farmers and ranchmen in that neighborhood that there was still life in the tractor industry; the Iowa corn grower would be given the same lesson in the same way.

The business of selling was not concluded at the factory or at the hotel in Charles City; it was carried on all the way home and contracts were signed on the train.

The convention in addition to bringing about actual sales inspired the Hart-Parr Co. to go after business stronger than ever before.

It showed conclusively that the solution of the present problem of the tractor merchandiser lies in the slogan, "BUSINESS IS WHAT WE MAKE IT" and that persistence is one of the greatest factors behind it.

That sales could be made in the East Iowa territory and that seventy-five prospects could be assembled at the factory at a time when the tractor business was supposed to be gone was due to the fact that the dealer who had to do with them

1. Knew his territory thoroughly.
2. Was familiar with general conditions and how to apply his policies to the special problems in all parts of his territory and solve them in terms of the tractor which he was marketing.

3. Was a power farming specialist.

4. Was sold on the idea that the greatest asset he could have was a satisfied owner and that a satisfied owner was possible through educating him toward being his own serviceman—so that the farmer tractor owner would be able to

make his own adjustments and his own replacements with a minimum of effort and a minimum loss of time.

5. Appreciated that no sale is ever lost to the aggressive dealer until the prospect has actually bought a competing make of tractor and that there is later hope even then.

Hart-Parr does its own financing of dealers and buyers but it adheres strictly

to the farmer. Under its plan of organization the responsibility for properly educating the dealer is placed squarely on the shoulders of the distributor who is held financially accountable for errors due to ignorance on the part of the dealer. The dealer, in turn, is held rigidly responsible for the proper education of the farmer tractor owners and is held financially responsible for injuries which result from the farmer's lack of knowledge in the operation of his tractor.

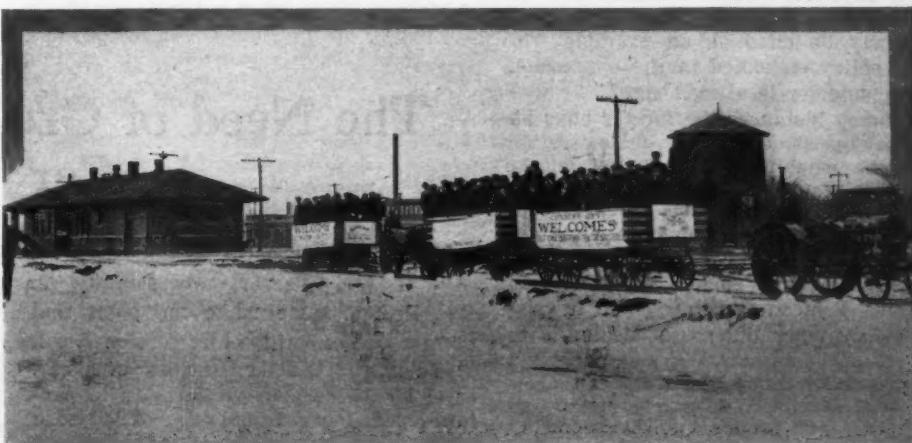
The company in order to operate such a plan of education successfully created an educational department which gives all its time to promoting this education in the field. By means of correspondence, conventions and traveling representatives of the company the education of the distributor is carried on continuously. The education of the dealer is carried on by the distributor in the same way with the help and co-operation of the Educational Department. The dealer gives all his time in a careful education, supplemented by letters and bulletins from the Educational Department, of each one of his tractor owners.

Distributors and dealers, their service men and salesmen are invited to the factory once each year and spend several days there in the study of educational problems that follow after the sale is made.

The plan evolved removes by stages the need of the service man on the farm. Difficulties are immediately communicated to the dealer and the serviceman goes out. He instructs the farmer operator what should be done but does none of the work himself. From the very beginning the farmer learns how to make adjustments. The earning power of the tractor is not diminished through an unnecessary loss of time resulting from trips of the serviceman from the salesroom to the farm.

The company also requires that every dealer carry a full line of parts. This likewise gives greater satisfaction to the owner.

The manufacturer through such intensive work as this was drilling in many of the lessons that the men in the field had taught.



The delegation arrived in special trains and one part of it brought a brass band along. Farm wagons were brought into play and tractors hauled them from the station to the factory and around town

# Selling Tractors Effectively

**T**HERE was much of interest to service men and dealers in the various technical sessions of the Society of Automotive Engineers held in Chicago during show week. One of the most interesting talks of the entire session was that of J. C. Thorpe, a graduate engineer of the University of Illinois. He has been an automobile dealer for years and lately a tractor dealer. Other valuable opinions delivered at this meeting are reprinted here.

QUESTIONS that would appeal to the service man and dealer were taken up for discussion at a meeting of the Society of Automotive Engineers held in Chicago during show week.

"The only man who has a right to be a dealer in tractors," said J. C. Thorpe, who spoke during the afternoon session on tractor service requirements, "is the man who sells good merchandise by good merchandising methods and who, having made the sale, remains in the capacity of a consulting expert on the use of the goods."

There has been considerable discussion on who is the best qualified man to be a tractor dealer. Mr. Thorpe gave it as his opinion that the best tractor dealer, regardless of whether he formerly sold automobiles, hardware or farm implements, is the man who keeps his tractors sold. The manufacturer should pursue the interest of the purchaser through the dealer. He must do it through the dealer because of the proximity of the dealer and his acquaintance with the purchaser. In doing this the manufacturer gradually develops his good will.

#### Building Good Will

It takes years of effort to develop the desired degree of public good will and it may be destroyed entirely by one bad step. As an example of the method necessary for the manufacturer to develop this good will Marshall Field & Co., may be cited as an example with their policy embodied in the expression, "The customer is always right."

In many instances the farmer buys his tractor by selecting his dealer rather than the machine. This should not be so. The matter of service, of course, enters into the relations between the tractor dealer and customer to a marked degree. It must be remembered, however, there is no such a thing as free service. Someone must pay and it must be the customer unless the dealer is to go out of business. We must reach a definite understanding of the meaning of the word service and we will not do so until there is proper co-ordination between the engineering and merchandising departments of our factories. This will result in a bona fide sales campaign with a proper service policy in-

cluded. Good service is the result of co-operation between the dealer, factory and owner during the life of the machine to the end that the owner shall receive continuous use at reasonable cost.

Age, Mr. Thorpe contended, makes no difference as regards the giving of service. Neither should it make any difference if the machine is in the hands of the original purchaser or not. In order for the dealer to give the proper quality of service he must be amply supplied with parts and the necessary technical knowledge to perform the repairs he is called upon to make. A bad dealer will discredit a good design and set at naught all the care and study given to the original design of the machine.

#### Comfort of Operator

Mr. Thorpe stated that he did not look with favor on the practice of replacing parts at shipping and labor cost and charging the customer where these replacements are due to defective material, even though the ninety-day guarantee period had elapsed.

In discussing the faults of design common to tractors Mr. Thorpe brought up the point that probably the most common offense is the absolute neglect of attention to the comfort of the operator. He stated that it was altogether incorrect to expect an operator to sit in a cast iron seat for ten or twelve hours at a stretch. He pointed out the remarkable

sales value in the tractor in which this point has been given attention. No one but the farmer can appreciate the courage necessary to get up at 4 o'clock the next morning after twelve hours the day before in a seat upholstered only with black enamel.

Another feature of design which the speaker stated is overlooked is that of supplementary tools. He stated that because the tractor is considered only as a plowing machine by a large percentage of operators the average tractor is in use only thirty-five days a year. Proper supplementary tools would make the tractor available for many more tasks and for longer periods during the year, bringing the average up to sixty-five to seventy days. This would spread the overhead and reduce the operating expense making the tractor appeal to the farmer as a better investment than it does today.

#### The Need of Data

A point which the speaker brought out as applicable to the truck dealer as well as the tractor is that the data the dealer has available should be interpreted to the prospect in terms of his problems. He stated there is a woeful absence of this kind of data. Where tests have been made they are of a highly technical character and have not been worded or expressed in such a way that the customer can link up his information with his own particular problems.

## The Need of Greater Accessibility in Car Design

**T**. F. CULLEN spoke on the "Need for Greater Service Accessibility in Car Design." He made the point that greater accessibility for service work also tends to lengthen the life of a car, as it makes service work easier to perform, less costly, and therefore more likely to be undertaken at the first indication of trouble. The supply of skilled mechanics is never large enough to fill the demand. Any improvement, such as

better service accessibility, which cuts down the time per operation in service work without impairing the car's subsequent efficiency, has exactly the same effect as increasing the number of skilled mechanics. With more accessible cars, service stations could turn out more work with fewer mechanics and therefore make bigger profits, or show a profit where they now show a loss, as many of them do. The dealer's success, both in selling cars and in servicing them,

is just as essential to the factory as the owner's satisfaction.

More and more cars are sold each succeeding year to replace worn-out vehicles. Service reputation, based on cars now in use, is rapidly becoming the predominating factor in these resales. Therefore anything that can be done to improve service work will make resales easier in future.

As an example of the results which could be secured by improving service accessibility, it is only necessary to recall that there are over 8,000,000 cars in use today, and improved design which would reduce the time necessary for service work to the extent of only two hours per car per year, would save the owners over \$15,000,000 a year on upkeep.

by seeing that the proper timing of the valves and their correct setting is not departed from and also by the use of up-to-date devices which would tend to better conditions necessary to the attainment of economy. For instance, the crankcase oil after it has been withdrawn when the oil is changed is utilized for the lubrication of hoists and for other auxiliary machinery about the garage. Mr. Smith is at present experimenting with reclaimed oil for the cylinders but has not as yet arrived at any definite conclusion.

#### Overspeeding Held Worst Abuse

Considerable interest and some amusement was expressed by the hearers to Mr. Smith's frank reply to the question of whether or not he was overloading his trucks. He stated bluntly that he is. He amplified his statement, however, by saying that his overload was compensated for by his insistence that the trucks are never overspeeded. He confessed that his overloads ran up to 30 per cent but claims that overspeeding is far more damaging to the truck than overloading and for that reason is rigid in his rulings against excess rates of travel.

## Truck Fleet Operation and Maintenance

**N. J. SMITH**, who is manager of truck maintenance at the Consumers Co., Chicago, spoke of the good results obtained by carrying maintenance to the greatest possible efficiency. The Consumers Co., operates over 150 trucks and by this system used under Smith's jurisdiction every one of these trucks receives a thorough inspection every night. A number of specially drilled men organized into specializing groups take care of the cleaning, lubricating and mechanical upkeep of these vehicles. The trucks in use, as was brought out in the discussion, average about 1,000 mi. a month. They are washed every night and after the washing is completed they are checked over and must be satisfactory to the inspector before they are allowed to go out on the next day's work.

#### Lubrication Important Factor

By carefully lubricating the trucks and by changing the oil as often as required, an astonishingly low upkeep cost has resulted. While it is true that the overhead of maintenance has somewhat increased by the elaborate care given, the cost of operating the fleet has been materially reduced in the long run and the depreciation of the equipment has been cut down to the limit. A number of questions were put to Mr. Smith by the truck men present. In reply to these some interesting information was brought out.

For instance an average of 10,000 mi. is secured on a set of tire chains. This figure is not accurate for all classes of work as in hauling coal it is possible to get an average of 15,000 mi. to the set of chains while in hauling stone or sand the mileage will be considerably shorter on the average.

Regarding the regrinding of cylinders, Mr. Smith stated that he could not lay down any set rule. Some cylinders have run 30,000 mi. without regrinding while others have run shorter or longer than this distance by a very large margin. One of the members inquired regarding the regrinding of crankshafts to which the speaker replied that he had not reground a crankshaft for four years. He stated that shafts which had been measured after having been in service for this length of time showed less than .002 in. wear.

Another one of the variable factors in maintenance is the friction disc on the clutch. Mr. Smith found these to vary to an exceptional degree. Some have to

be refaced in one month while others will run for years. He thought that an average figure would be in the neighborhood of one and one-half or two years.

An interesting fact brought out by Mr. Smith in his discussion is that he has a man whose entire time is taken up by fuel and oil research. The result of this is that mileage on fuel and oil has been increasing right along. This is accomplished by absolutely correct setting of carburetor and spark for each truck,

## Engineering Analysis Applied to Truck Selling

**N. J. OCKSREIDER**, in his talk on engineering analysis applied to truck selling divided his topics into two heads, first the analysis of a given market and second the ability to analyze the transportation needs of the prospect. As an example of what he meant by proper analysis of the truck market he pointed out a city district might be divided according to area and while superficially all of the salesmen were allotted equal territories the potential market in one division of the district might be far greater than in another. He outlined the necessity for making a careful study of all of the factors involved in determining the number of actual prospects and the actual number of trucks required to meet all the transportation problems of any given district. Mr. Ocksreider by his analysis made clear the importance of apportioning sales effort and expense according to the possibilities of any definite areas.

#### The Prospect's Need

The other phase of analysis applied to truck selling is in the use of engineers equipped to enter the establishment of a prospect and properly analyze the truck equipment necessary to most efficiently handle the transportation problem involved. The factors taken into consideration include not only the number of trucks and their size but the routing, control and maintenance of the vehicle. The man to handle the work will of necessity be a qualified transportation engineer of sufficiently broad business experience to thoroughly grasp the needs of his plant. Not only must he accurately gauge the type of equipment and the number of trucks of each capacity but also

their performance characteristics as determined by engine size, wheel size, gear ratio, etc.

Louis L. Scott, chief engineer of the Standard Engineering Co., St. Louis, presented his paper on the application of steam power to an automotive truck.

At the banquet which was presided over by H. D. Horning the speakers were: David Beecroft, directing editor of the Class Journal publications and president of the S. A. E.; H. H. Merrick, president Great Lakes Trust Co., and Prof. John Paul Good, University of Chicago.

#### UNIONTOWN ELECTS OFFICERS

Uniontown, Pa., Feb. 5—New officers were elected and plans made for the annual automobile show to be held here this season at the meeting of the Uniontown Automotive Dealers' Association this week. The local show will be held in March, either just preceding or just following the Pittsburgh show. The new officers of the association are J. Q. Adams, president; Leo Reed, vice-president and George B. Smith, secretary and treasurer.

#### DEATH TAKES W. D. TREMAIN

Fort Dodge, Ia., Feb. 4—William D. Tremain, member of the firm of Tremain & Rankin organized in 1907 the second to engage in the automobile business in this city and the forty-third in the state, died at his home here Tuesday after a long illness. Mr. Tremain took a prominent part in the state's automobile industry and was an organizer and director of the Iowa Motor Trade Bureau. He was 64 years old. He is survived by a widow and three children.

*CUSTOMERS LEAVE THE OVERLAND-HARPER  
COMPANY'S SERVICE STATION KNOWING*

# What the Job is Going to Cost

*The Estimate Is Based on the Carefully Recorded  
Cost of Thousands of Service Jobs*

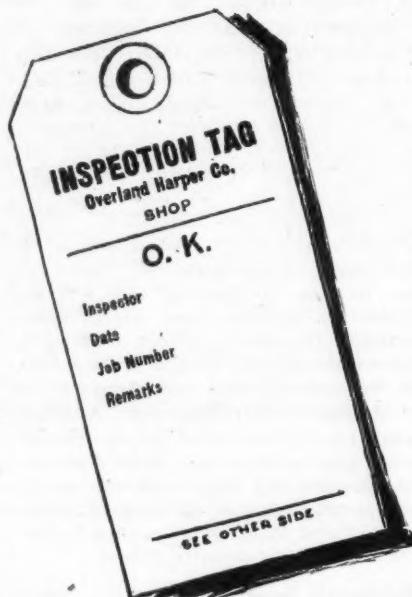
**A**LTHOUGH it attributes to the excellence of its service station and repairshop no inconsiderable part in the 400 per cent increase in its retail car sales in the last two years, the Overland Harper Co., distributor of Overland and Willys-Knight automobiles in the Philadelphia territory, has put into operation a new repairshop policy which has worked out notably well.

The company considers the greatest handicap in any shop a lack of accurate estimate figures and the consequent necessity of asking an owner to leave the car without knowing how much the repairs will cost him. So it has changed this and now every operation on any model Overland, or Willys-Knight has been "costed" and "carded," permitting the customer who brings in a car for any sort of work, to know in advance just what his bill will be and when the job will be finished.

**Customer Authorizes Work**

The customer authorizes both the work and the price before the work is started and if the repairshop does double the work, the price is the same, unless the customer authorizes the additional.

As the company's list of satisfied customers is increasing monthly, it feels that it exercised good judgment in taking the step of placing its already good repairshop on an even more efficient basis.



Standardized service trade-mark of  
the Overland Harper Co., which  
makes a distinctive note on all its  
service matter

Now the company knows, too, the exact time that a high grade mechanic should use in making any sort of repairs on the cars handled.

Right at the inception of a service or repair job there is an effort to show interest in the customer and to be accommodating. This is done through having a number of alert "order-takers," whose job, by the way, means a great deal more than its title implies. These men are specially trained to this end of the business and, in the opinion of the service manager, they are among the best and most valuable men in the plant.

The Service Salesman

They must be (a) expert mechanics; (b) wide-awake and quick-moving; (c) adept in meeting customers politely and (d) able to talk intelligently about any model of car handled.

While service salesmen usually are not expert mechanics, by any means, in most automobile plants, it is considered necessary for the Overland Harper order-takers to be, as they are the first to meet the customer and they must not only listen to his troubles, but be able to tell him immediately what the shop's

In the center is the inspection tag. This strip of red pasteboard is fastened on a car by the tester, as his "O. K." On the reverse side is a notice to the owner relative to the complaints. The garage record book form shown above gives a complete report of every car entering the service station

regular operating mechanic can do for him. They are the "diagnosticians" for the preliminaries; the shop mechanics are the "operating surgeons," so to speak.

The order-taker carries with him a form, called the "authorization pad," on which is listed the work which the owner wants done. After the owner has told what he thinks ought to be done and the order-clerk has jotted down the various items, he enters the car with the owner and, while they are talking over the trouble, they drive a few blocks to allow the order-clerk to form his own opinion.

If the order-clerk is certain of the difficulties and that they can be attended to at once, he proceeds to write up an order, which, in any event, goes to an estimator in the shop office.

If he cannot estimate the cost of the repairs for any reason, the car goes into the shop on what is known as a "lead charge," or charge for examination and disassembling.

#### The "Lead Charge"

Supposing, for instance, that a car has gone into the shop on a "lead charge," because of a peculiar noise, knocking, or otherwise, that does not seem attributable to the usual causes, although it is apparently in the engine. There is a thorough examination to ascertain the cause and extent of the trouble. If the customer does not care to go to the expense of having the difficulty straightened out, the parts are replaced exactly as they were. If the repairs or adjustments are proceeded with, the lead charge is absorbed in the estimate. After the order-taker's list is taken, it is estimated in the shop office, the cost of time, labor and parts needed entering therein.

If the owner or his representative does not care to wait for the estimate, he is called on the telephone. A telephone call is also made if additional repairs, or re-

#### Promise Record Card

OFFICE RECORD	
Name	Model
Phone	Job No.
Car wanted	
Expected date of delivery	
Delivery extended to	
Remarks	
SHOP RECORD	
Name	Model
Phone	Job No.
Car wanted	
Expected date of delivery	
Delivery extended to	
Remarks	

pairs other than those first authorized, are found necessary. In this case, it is necessary for the owner to give a second authorization covering the additional work, so that nothing is done without

## How the Overland-Harper Co. Advertises Its New Repair Shop Policy

# A New Kind of Shop!



WHEN you order a suit of clothes the tailor tells you the amount and you know what you will have to pay when it is ready.

You place an order for a piano and you make it a point to find out to the cent what it will cost.

No matter what you buy, it has a fixed price which you are entitled to know when you sign up.

You want no guess work about it. The price is the prime consideration.

That's business.

When you take your motor car into a repair shop you have a right to know what the repairs will cost. You are merely buying just so many hours of mechanics' time plus whatever new parts are needed.

We do this very thing.

Bring your Overland or Willys-Knight car to our shop and you are told what the repairs will cost and when it will be ready. You authorize the work and the price and you pay no more, even though we may do twice the work, unless you authorize the additional.

Before we could install the system, thousands of operations on all Overland and Willys-Knight models were examined. They were costed and carded and indexed so as to give us the information quickly.

We know the exact time that a high-grade mechanic should use in making any sort of repairs to our cars.

Willys-Overland owners in Philadelphia have this additional distinctive advantage over the purchaser of any other make car—and they are entirely satisfied with it.

## Overland Harper Co. Shop: 41st and Chestnut Streets

At the left is the promise record card. This is a white, stiff form divided in the center by a perforated line, and becomes two forms. The top half is the Office Record card and the lower half the Shop Record card. The information contained therein is for the sole use of the foreman

the full authority of the owner. This eliminates disputes and is satisfactory all around. The owner, then, has seen, before authorizing the work, the totalled estimate of parts and time, or labor and material; he knows in advance what his bill will be and he can either back out, or order the work done.

In accepting repair orders, the order-taker uses a form known as an "Authorization Pad." This is composed of two sheets to the set: The white original, or office copy and a blue duplicate, to be retained by the customer. Both copies give the following information:

Owner's name, address and telephone number; by whom the work is ordered, whether owner or chauffeur; name of

order-taker; model of car; car's serial number; license number and speedometer reading and date of the car's purchase.

After the estimate has been accepted and signed by the owner, the work is typed on the regular repair order form of the conventional type.

The repair order is then registered in what is known as the "Garage Record Book," in order to comply with the law which requires the registration of every car entering the building for repairs. This form shows: The dates of arrival and departure; repair order number; name and address of owner; make of car; manufacturer's number and license number.



## EDITORIAL



# Fixed-Price Repair Benefits

A WISCONSIN dealer, after a little over a month's use of the fixed-price repair system, in which the price to be charged for a job is named before the car is turned over by the owner to have the work done, declared that he had a higher appreciation of the other service depots of the town, particularly if they used the fixed-price system. An example will explain: When this dealer—for convenience we call him Dealer A—takes in trade a used car of the make sold by Dealer B, he does not overhaul it himself but under the fixed-price system he takes it to Dealer B and gets the work done. He reasons that Dealer B can do the job cheaper and better because he has a fixed-price system to work under. This is an excellent example of confidence that should exist between dealers, and Dealer A was frank to admit that the use of the fixed-price system was largely responsible for this forward step. He admitted that previous to the use of the fixed-priced system he had not that measure of confidence in his fellow dealer that he has since the application of the system.

Here is a thought: If one dealer actually mistrusted

another in the repair work before the fixed-price system was used how much more room is there for distrust between the customer and the repairman? One of the greatest benefits of the fixed-price system is that it is a builder of confidences. It builds respect between man and man where the system is used. By it repair managers or service managers are brought closer together. They are taking lunch together if they live in the same town. They will soon be forming little service organizations in which three or four will gather together and discuss common problems.

If sensibly carried out this fixed-price system is certain to establish much better relationships between car owners and the repair shop. It will make the owner feel a little more at home in the service building. He will be happier because of having the service job properly and satisfactorily sold to him. Selling service is just as much a matter of good merchandising as selling a new car, truck or accessory. The fixed-price system is simply another way of selling service and selling it as it should be sold.

### COURAGE AND INTEGRITY NEEDED

THE great industrial world is now passing through the critical period of readjustment and is apparently climbing back to a normal and balanced condition. Even under the very best of conditions it must be admitted that it is going to take a great deal of energy to put business back on its feet. It will be a slow process but it is much better to build up gradually than to travel by leaps and bounds without any farsightedness. Industry to-day needs optimistic men of courage and integrity. The one fundamental above all others which must be displayed by every business man is integrity. No organization can operate on a cancellation basis. If an agreement is made either in writing or verbally it must be strictly observed by both parties.

One thing that has been lacking is courage. Men have gone out to sell and have naturally found things rather dull, but instead of keeping up their courage and making a fight to overcome the sales resistance they have given up and come back to the office to tell how poor conditions were. Business in the past five or six years has resulted in building up large sales organizations that have not been compelled to meet competition and strong sales resistance, and the natural effect is now displayed in an "order taker,"

not a salesman. A \$90,000 service station was recently built in one of the large cities of the middle west and at the time of its completion, not a single representative of any service station equipment manufacturing company had called on the officials to try to sell the equipment necessary for that building. Is that salesmanship and does it display any effort on the part of the manufacturer or his representative to get the business available?

The coming year has a bright outlook and promises to be a very prosperous one; but we must rely upon the kind of management that demonstrates optimism, ability, courage and integrity to put business back into a normal condition. Get up courage and when you have regained it pass it on to your neighbor.

In the wake of the automobile shows held at New York, Milwaukee, Toledo, Cleveland, Chicago and other cities lies a trail of prospects who can be made into actual buyers under the impetus of a strong merchandising campaign. In the eastern part of Iowa recently a distributor wanted to sell tractors. He adopted a slogan — business is what we make it — and communicated it to every member of his own force and to every member of his dealer organization. He backed up this slogan with two fundamentals of effective selling, confidence in the industry and persistence in sales efforts. With such a slogan he went after business and got it.

## Georgia Dealers Back Move for More Diversified Crops

### Automotive Dealers' Association Takes Action at Convention— Similar Plan in Alabama

ATLANTA, GA., Feb. 5—A movement to encourage a program of diversification of crops on Georgia farms through a campaign that is to be inaugurated and carried on systematically through every county of the state, is to be fostered by the Georgia Automotive Dealers' Association, according to a decision reached at the annual convention held here.

The impetus to the movement was given by A. R. Kroh, of the sales promotion department of the Goodyear Tire & Rubber Co., in an address before the second annual convention of the association. While the movement to bring about a diversified program will be fostered by the automobile association, bankers, merchants and industrial leaders throughout the state will be asked to assist in the work. Plans are being formulated by association officers to arrange a general meeting for the near future and invitations will be extended to bankers, merchants and other business men, as well as automobile dealers throughout the state, to attend. It is believed this meeting will probably be held during the week of the automobile show.

#### Similar Movement Under Way

A similar movement is already under way in Alabama, fostered by the Alabama Automobile Dealers' Association. An address was delivered by Mr. Kroh at the sixth annual convention of the Alabama dealers held at Albany, Ala., Jan. 24. The following day a conference of bankers, business men and merchants was held at Birmingham where the movement was endorsed and it was decided to carry it out during the coming year under the auspices of the automobile association.

William L. Mathers, of Atlanta, president of the Georgia dealers, presided at the second annual convention. In his annual address he reviewed the activities of the association the past year. Its principal activities included the defeat of several bills that were introduced before the state legislature and that, if they had passed, would have compelled the automobile dealers to carry unnecessary burdens. When the Federal Reserve Bank discriminated against automobile paper the association began a four months' campaign that finally convinced the bank officials that the automotive industry was a vitally essential one, and the discrimination was withdrawn.

A brief address was given by W. T. Waters, of the Waters Motor Co., of Macon, and D. C. Black, chairman of the legislative committee, gave his annual report on the activities of that committee.

At the afternoon session addresses were delivered by R. H. Martin, of the Southern Oakland Co., of Atlanta, on "The Status of the Industry—Past, Pres-

ent and Future from the Dealer's Viewpoint;" by L. D. Hicks, advertising manager of the Southern Ruralist, of Atlanta, and business manager of the association's magazine, "CoMotoroperation," on "Automobile Advertising."

An open forum was held, "Tell Your Troubles and Learn from Others." R. C. Dunlap, of the Fountain-Dunlap Auto Co., of Macon, had charge of the passenger car division; T. K. Johnson, of the Southeastern G. M. C. Truck Co., of Atlanta, had charge of the truck division; Ed Yancey, of the Elyria Co., of Atlanta, had charge of the accessories division; Wiley West, of the Atlanta branch of the Firestone Tire & Rubber Co., had charge of the tire division.

Officers for the ensuing year were elected as follows:

Volney Williams, of Waycross, president; D. M. Lyons, of Augusta, first vice president; A. S. Hatcher, of Macon, second vice president; Tom Wisdom, of Chipley, third vice president; W. E. Cody, of Columbus, fourth vice president; D. C. Black, of Atlanta, fifth vice president. Directors elected were Willis Heard, of Savannah; W. G. Turpin, of Americus; E. W. Post, of Rome; A. R. Williams, of Griffin; W. L. Roberts, of Valdosta; Thad Huckalbee, of Albany; Burrell Cole, of Columbus; W. C. Denny, of Athens; George W. Gilmer, of Sandersville; E. S. Street, Jr., of Dublin.

## Peugeot Withdraws From All Racing Contests This Season

BY W. F. BRADLEY

*European Correspondent of Motor Age*

Paris, Jan. 21—Peugeot will not take part in any automobile races this season, according to a decision of the Board of Directors of this important French company. This decision comes as a surprise, for not only has Peugeot been a strong supporter of racing in the past, but it has a set of 183 cu. in. racing machines all ready. This policy removes a possible competitor from the Automobile Club of France Grand Prix for next July, and makes it very unlikely that any Peugeot cars will be sent for the Indianapolis race. General business depression is said to be the reason for Peugeot's withdrawal from racing.

## Dealers Support Movement to Support Garage Building

Cincinnati, Feb. 7—Automobile dealers here are much interested in a new garage-construction ordinance which will have the effect of encouraging garage building, both private and public, by making them less costly, and will, in the belief of dealers, have a stimulus on the sale of automobiles.

The ordinance, drafted by the building inspector, removes many of the restrictions on garage construction. Numerous garage building permits have been rejected in the last few years because owners did not desire to bear the expense made necessary under the present ordinance.

## Tire Dealers From Ten Cities Organize National Association

### Cleveland Selected As National Headquarters—Chicago Man Is Named for President

CHICAGO, Feb. 2—The National Tire Dealers' Association has been organized here following a three days' session of delegates from ten cities where local associations have already been established. Cleveland was selected for the national headquarters and Phillip O. Deitsch of that city was appointed secretary.

The purpose of the association, according to the constitution, is "to advance and safeguard the business interests of tire dealers and to promote a co-operative relationship between the manufacturer, tire dealer and buying public." Membership in the association is restricted to local associations and a tire dealer in business in a town where there is no association must affiliate with an organization in the nearest city in order to avail himself of the advantages resulting from membership in the national body.

#### Against "Gyp" Dealer

A resolution was adopted defining the legitimate tire dealer.

"Whereas," it says, "we believe that the policies of a great many manufacturers have been unethical with reference to their interpretation of legitimate tire merchants therefore be it resolved that this association consider a tire merchant to be one who sells tires at retail and whose policies are not dictated by any manufacturers. The definition of a tire merchant shall be as of firms having a permanent place of business, making their major profits from the sale of tires, tubes and tire accessories; also repair men and vulcanizers and such owners of garages who carry a stock of tires and tubes for resale."

The cities represented at the convention were Milwaukee with a membership in the local organization of 50; Cleveland, 97; Chicago, 100; Minneapolis, 33; Kansas City, 42; Baltimore, 45; Memphis, 14; St. Louis, 48; St. Paul, 15 and Cincinnati, 25.

The officers were as follows: President, Thomas F. Whitehead, Chicago; vice-president, R. F. Valentine, Cleveland; treasurer, Henry Stenzel, Milwaukee. The directors in addition to Messrs. Whitehead, Stenzel and Deitsch are Edward P. Farley, Minneapolis, and A. B. Clark, Kansas City, for one year; Joseph Roberts, St. Louis, R. J. Walters, Baltimore, and R. R. Woolley, Cincinnati, for two years.

#### FLINT BACKS DURANT

Flint, Mich., Feb. 5—Citizens of Flint have subscribed an amount aggregating \$5,000,000 for investment in Durant Motors, Inc., which will locate its first plant in this city. Flint regards W. C. Durant as its "favorite son" and is willing to back his new enterprise with cash.

## Seek War Department Trucks for Use on State Highways

**Nebraska Representative Introduces Measure in Congress Counter-acting Anthony Bill**

**W**Ashington, Feb. 5—Congressman Frank Reavis of Nebraska has drafted a bill which, if passed, would force the War Department to turn over to the Bureau of Public Roads all surplus motor trucks, tractors and mobile shop units. The proposed legislation has the support of the National Association of State Highway Officials who feared that the proposal of Congressman Anthony of Kansas to sell on the open market thousands of army trucks and other automotive equipment would be carried out.

Figures have been placed on file with the Chairman of the Select Investigating Committee of the House, purporting to show that \$108,000,000 worth of tractors, trucks and automotive equipment is in possession of the War Department. A large part of this equipment, it is claimed, is surplus and should be transferred to the Bureau of Public Roads where it is urgently needed. Congressman Reavis is advised that there are many tractors and trucks at camps along the Mexican border which are serviceable but not in use.

According to this investigating committee, the War Department has informed the Bureau of Public Roads that this equipment is not available for their use. It is asserted that the War Department further claimed that manufacturers had protective clauses in contracts which prevented the transfer for other than war purposes.

The Reavis measure would require the states taking this surplus material to pay 20 per cent of the original contract price. With allowances for mileage and other items the cost would be comparatively low. The highway officials intend to push this bill at this session though it is doubtful whether they will obtain any action.

## Albert Champion Chosen by Old Timers to Head New Club

**C**HICAGO, Feb. 3—The Old Timers' Club, which was a more or less informal and spontaneous organization originated a year ago in the office of the Standard Parts Co. in Cleveland, assumed a formal and definite form last evening at the first annual dinner of the organization at the Congress Hotel. After a year of button-wearing and rapid growth, officers were elected and the organization formalities are to be completed by a committee. Albert Champion of the Champion Ignition Co., Flint, was chosen president. He came to America 21 years ago from France, a professional bicycle rider, and has been a part of America's automobile industry ever since.

Clifford Ireland, member of congress,

was toastmaster. Addresses were made by David Beecroft, directing editor of the Class Journal papers; Forrest J. Alvin, of the United States Motor Truck Co., Cincinnati; and Samuel E. Hibben, attorney, Chicago. The officers follow:

President, Albert Champion; vice-presidents—Passenger Car Section, Howard Marmon, Nordyke & Marmon Co., Indianapolis; Motor Truck Section, Martin L. Pulcher, Federal Motor Truck Co., Detroit; Parts and Accessories Section, John Younger, Standard Parts Co., Cleve-

## A. A. A. Authenticates Stock Car Record By Mulford

**N**EW YORK, Jan. 31—*The American Automobile Association has authenticated the record established for stock cars established when Ralph Mulford covered a mile straight away at Daytona in 35.01 seconds in a Paige 6-66 Daytona stock.*

land; Jobbers' Section, Gregory Flynn, Edward A. Cassidy Co., New York; Distributors' Section, W. L. Hughson, San Francisco; Dealers' Section, Thomas J. Hay, Chicago; Newspaper Section, Walter Birmingham, Chicago Evening Post, Chicago; Automobile Publication Section, C. G. Sinsabaugh, Motor Life, New York; Contest Section, Richard Kennerdell, Chairman, Contest Board, A. A. A., Franklin, Pa.; Organizations' Section, Alfred Reeves, Gen. Mgr., National Automobile Chamber of Commerce, New York; Advertising Section, Lloyd R. Maxwell, Erwin, Wasey & Co., Chicago; secretary, F. Ed. Spooher, Detroit; treasurer, H. S. Firestone, Firestone Tire & Rubber Co., Akron.

## BACON HEADS SAVANNAH TRADES

**S**avannah, Ga., Feb. 5—Percy S. Bacon, president of P. S. Bacon & Co., has been elected president for the coming year of the Savannah Automobile Trades Association. The annual meeting was held at the De Soto Hotel. Mr. Bacon succeeds J. Willis Heard. Other officers elected are E. S. Richardson, first vice president; A. W. Boyd, second vice president; J. R. Parker, secretary; J. J. Leautey, treasurer. Directors are J. R. Koerper, W. K. Bache, H. L. Evans, E. D. Craig and Willis Heard.

## BINGHAMTON TO HAVE NINTH SHOW

**B**inghamton, N. Y., Feb. 5—The ninth annual show of the Binghamton Automobile Dealers' Association will be held Feb. 28 to March 5. R. B. Moffitt is chairman of the show committee and Will F. McNulty, manager.

## Infringement of Weed Chain Patent Charged in Law Suit

**Unfair Competition Alleged in Action Brought Against Philadelphia Maker and Seller**

**W**ILMINGTON, DEL., Feb. 4—Suit has been started in the United States District Court here by the American Chain Co., Inc., against the United Auto Stores, Inc., of Delaware, and George J. Campbell, for infringement of the Weed chain patent No. 768,495, granted Aug. 23, 1904. Both defendants have their principal places of business in Philadelphia. A motion for preliminary injunction has been set for hearing before Judge Morris on Feb. 14.

It is alleged in the complaint that a chain of the so-called reversible ladder type, was manufactured by Campbell so that it closely resembled in construction and general appearance the genuine Weed grip, but containing inferior quality material and workmanship. These chains were sold by the United Auto Stores. Except for the acts of the defendants, it is declared there has been general acquiescence on the part of the public in the rights of the American Chain Co. under the Weed patent.

### Allege Unfair Competition

It is further alleged that the defendants are engaged in unfair competition in that the chain grips made by Campbell and sold by the United Auto Stores are provided with cross-chains having a light coating of copper plating which contrasts with the gray coating of the side chains, giving these chains an appearance decidedly similar to the distinctive dress that has long been given to the Weed grip by the American Chain Co. by the use of a brass plated cross-chain contrasting with gray finished side chains.

Further charges of unfair competition are based upon the assertion that the United Auto Stores has been selling the Campbell chain grip at prices lower than the Weed grips, with the representation that such grips are the same as the Weed grips and are made for the United Stores by the American Chain Co. under a special contract and at a special price, whereas the facts are that the grips in question were not made by the American Chain Co. or sold by it to the United Auto Stores and are of inferior quality and workmanship.

**N**ew York, Feb. 1—Life of the patent granted Harry Parsons, known technically as No. 723,299, under which the Weed tire chains have been made for seventeen years, expired March 24, 1920. This was controlled by the American Chain Co., which succeeded the Weed Tire Chain Co. and purchased the Weed holdings. The company also owns the Weed patent No. 768,495. The Parsons patent covered a chain put on zig-zag fashion, and the Weed a chain which goes straight across the tire.

## No Slack in Market Expected by Dumping Army Tires Here

### Surplus Stocks in France Have Already Been Bought By American Syndicate

**N**EW YORK, Feb. 4—The lack of legal provisions forbidding the re-importation into this country of surplus army tire stocks in France, probably means, according to General Manager Viles of the Rubber Association of America, that all of these tires intended for army use abroad will soon be landed in America and offered for sale to American automobile owners.

Cable dispatches have indicated that there were approximately 200,000 pneumatic tires and 160,000 solids, and a presumably large supply of inner tubes. Of this number Viles said, all but about 55,000 pneumatics and 80,000 solids had been bought by representatives of American jobbing syndicates to a recent date and the remainder have probably been purchased by now.

Thousands have been sold already to American tire dealers by the jobbing syndicate, operating in New York and Newark, N. J. The tires are of five standard American makes. Though they are unused, they are not new in the sense that they have been manufactured several years and consequently have suffered deterioration through ageing. Manufacturers have declared their intention to deny the usual adjustment privileges.

Manufacturers do not anticipate any particular slump in the market owing to the absorption of this supply but there has been considerable annoyance expressed that there had been no legal barriers set up to the re-importation of this surplus.

### Another Increase in Price, Franklin Factory Announces

Syracuse, Feb. 7—Prices on Franklin cars will be increased from \$100 to \$150 March 1 according to advices from the factory today. The new increase will be in addition to the increase imposed in January but will leave the cars still from \$300 to \$500 lower than the prices in effect previous to the original cut in September last.

Under the new scale the touring car will be increased from \$2700 to \$2800, the price previous to September being \$3100. The sedan will be increased \$150 from \$3700 to \$3850, the price previous to September being \$4350. Other models are increased from \$100 to \$150.

### East and Midwest Secure Reductions in Gas Price

New York, Feb. 5—Announcement of reduction in prices of gasoline and crude oil in virtually all the eastern and mid-western territory has been made this week by the various oil companies. This follows other cuts made in the past few weeks. The first reduction thus far made

in the New York and New England territory was announced by the Standard Oil Company of New York which marked down motor gasoline one cent a gallon. The Standard Oil Co. of New Jersey also announced a cut of one cent, the second in the past two months.

The Sinclair Refining Co. has reduced gasoline two cents a gallon in Cleveland and has made a second cut in a month in Chicago where the price at filling stations is 25 cents and for tank wagon delivery 23 cents. The same price has been

## Distributor, 26 Years Old, Named

**C**INCINNATI, Feb. 7—Clarence A. Baiter, 26 years old, has been made manager of the Sayers Motor Sales Co., distributors of Sayers automobiles in parts of Kentucky, Indiana and Ohio, with headquarters here. He is said to be one of the youngest managers of an automobile concern in the country. Baiter has been connected with the Sayers-Scoville Co., manufacturers of the automobile, in this city, for 10 years.

made by the Standard Oil Co. of Indiana for the entire midwest territory.

Crude oil has been reduced to \$2.50 a barrel by the Magnolia Petroleum Co. and the Prairie Oil & Gas Co.

### Advertising Symbol Basis of Suit Brought by Carhart Motors

St. Louis, Feb. 7—Suit for \$5,000,000 damages and an injunction to restrain the Gardner Motor Co. of this city from using the advertising symbol which it claims to be similar to its own has been filed by the Carhart Motor Co., of Wilmington, Del., and Oklahoma City, in the United States District Court.

The plaintiffs assert they were injured to the extent of \$5,000,000 by the Gardner company's taking their trade mark after they had spent \$50,000 advertising the symbol in Oklahoma.

I. W. Sleyter, assistant sales manager, in the absence of Russell E. Gardner, vice-president of the defendant firm, said no statement in answer to the suit would be filed until the petition had been examined closely.

### NO CHANGES IN LAFAYETTE

An error in MOTOR AGE, Jan. 27, gives the impression that the chassis of the Lafayette car has been altered to reduce the height of the frame. This is incorrect, as no alterations have been made in the Lafayette chassis. The spring suspension of the Lafayette is so worked out that it has been possible to secure with maximum clearance a minimum of frame height. The statement gives the impression that the car has been changed.

## Dealers' Sales Curve Upward as Result of New York Show

### Selling Momentum Is Continuing—More Interest in Trucks and Used Cars Also Shown

**N**EW YORK, Feb. 5—Metropolitan dealers find much encouragement in the steady tone of the market at the close of the first week of February.

There is every indication that the selling momentum gathered in the New York show, early in January, has been lasting and that a gradual increase in buying may be expected for the next few weeks.

Particular significance is attached to the fact that business in general along the row is nearly 100 per cent better than last October and November and considerably better than December, and it is pointed out that in addition to this the "spotty" business of January has settled down to a steady demand for cars day by day.

While the New York dealers do not expect the spring to develop business anywhere near the volume of last spring, they are confident that the sales curve is definitely on an upward trend and that some real brisk trading may be expected just as soon as the public becomes satisfied that the winter has passed. They find much encouragement in the thought that every day the present mild weather lasts is helping to sell prospective purchasers on the fact that there is to be no real hard winter weather and that cars purchased now may be driven nearly every day from the date of purchase. This is an important phase of car merchandising in New York in view of the inadequate garage space and the consequent high rental rates.

Signs of increasing interest in trucks are reported in several of the truck salesrooms. While sales have been slow, the inquiries of the past few days have been more numerous than at any time in several weeks. The used car market is reacting slightly with the new car market, it having shown some signs of reviving interest, but the dealers are inclined to believe that the used car sales curve will lag several weeks behind the new car curve in the spring.

### Cliff Durant to Have Charge of Father's Product on Coast

New York, Feb. 4—R. C. (Cliff) Durant, son of W. C. Durant, will have charge of the distribution on the Pacific Coast, of the cars which will be manufactured by Durant Motors, Inc. He will also be in charge of an assembling plant which ultimately will be erected at Oakland.

As soon as his father announced the formation of the company which he will head, the younger Durant resigned as vice-president of the Chevrolet Motor Co. of California. With him will be C. M. Steves who has been Mr. Durant's assistant for several years in active charge of the Oakland Chevrolet plant. Both men will give all their time to the new organization.

## Two More Executives of Ford Announce Their Resignations

**Foreign Director and Philadelphia Manager Out—Price of Tractors Cut \$165**

**D**ETROIT, MICH., Feb. 5.—W. C. Anderson, director of the Ford Motor Co. operations in Europe with headquarters in London and Paris, has tendered his resignation and a short time later the resignation of Louis Block, in charge of the Philadelphia branch, also was confirmed by Ford officials. Many rumors are in circulation about Detroit to the effect that other resignations among the executive personnel as well as branches are expected.

Henry Ford has been busy all week in conferences with bankers, and no statement could be secured from him. Edsel B. Ford still is in the hospital recovering from an operation, and officials at all of the Ford plants here decline to give out any information whatever regarding the progress of the conferences or the many rumors of resignations. No information regarding the resignations of Messrs. Anderson and Block could be secured from the Ford office, and it was not until Anderson and Block had made the announcements that Ford officials would admit the resignations had been received and accepted.

### Statements in Dearborn Paper

In the absence of statements from officials as to the reason for these resignations and the reluctance of both Messrs. Anderson and Block to discuss them, semi-official statements are to the effect that the anti-Jewish campaign of Henry Ford's newspaper, The Dearborn Independent, is responsible. From a man close to Mr. Anderson it was learned the foreign chief had been driven to the point of severing relations with the company by reason of a virtual boycott on Ford products in foreign countries as a result of the attack on the Jews. This man said not only were the majority of foreign dealers of Jewish descent, but that the money in Europe was in the control of Jewish bankers. Likewise, probably a majority of the prospective customers for Ford products were of Jewish origin or closely connected with that race.

Business in the foreign countries, it is said, several months ago, at the outset of the campaign, began to slump and grow worse rapidly until the point was reached where it became apparent the attitude toward the Ford Jewish fight had practically ruined the business of the company on the continent. Mr. Anderson, who is regarded as one of the most competent men in the foreign field, is said to have made repeated entreaties, appeals and finally demands that the Jewish attack cease, but all of his efforts are said to have been unavailing and instead the attacks became even more bitter. The recent resignation of Vice-President Klingensmith, which was in

great measure due to the same cause, convinced Anderson, according to his friend, that there was no alternative and he promptly decided to come to America and tender his resignation.

Mr. Anderson was unable to see either Henry Ford, who was in the banking conferences, or Edsel Ford, and placed his written resignation on the desk of each of them shortly after noon Wednesday.

Mr. Anderson is widely known among automobile men in America and Europe as "Fuzzy" Anderson. He was one of

## Tries to Go; Can't; Engine Stolen

**DETROIT, Feb. 5—Page Hercules, Sampson and Jesse James.**

*Jim Smithers, employed on a contract at Woodward Avenue and Seven Mile Road, stepped into his touring car to drive home yesterday afternoon, put his foot on the starter and cussed when it failed to work. Further effort proving futile Smithers alighted and raised the hood to find that some strong armed gent of the bandit type had deliberately lifted and departed with his engine and generator.*

*Inquiry in the neighborhood failing to reveal trace of anyone seen in the neighborhood with a derrick, Smithers communicated with police authorities who have added one engine to the list of "missing" on record at headquarters.*

the many bicycle racers who entered the automobile business at its inception. He joined the Ford Company as branch manager 16 years ago and later was put in charge of the Chicago business after several years in St. Louis.

No information could be secured regarding the resignation of Mr. Block other than statements of friends that he was prompted by the same reasons that forced the resignation of Mr. Anderson. A report that Gaston Plaintiff, who also represents Ford interests abroad, had resigned could not be confirmed.

In connection with the confirmation of the resignation of Messrs. Anderson and Block, Ford officials announced the reduction in the tractor price of \$165.00.

**D**etroit, Mich., Feb. 4—Dr. J. E. Mead, one of the executives in the Sociological Department of the Ford Motor Co., said today the company had decided to conduct the department on a smaller scale in the future. Mr. Mead made it plain this does not mean the operations of the department will be curtailed, but rather that work will be done with fewer employees. At one time the department had a force of 130 workers.

Dr. Mead said Dean S. S. Marquis had definitely severed his relations with the company and while no announcement has been made, it is understood Dr. Mead in future will have charge of the department.

## Cleveland Show Brings Results To Both Car and Truck Dealers

**First Week Following Exhibit Outstrips Best Week In Previous Two Months**

**C**LEVELAND, Feb. 5—Sales in the first week following the Cleveland automobile show far outstrip the best week's business during the months of December and January, according to retailers of passenger cars who were canvassed.

Truck dealers also assert they have experienced a healthy revival of business since the show. Both passenger and commercial car dealers assert that the curve of business is upward, that the swing to better times was caused by the show, and that they finally expect to get into full swing about April 1.

Several of the passenger car dealers canvassed asserted that sales in the first week of February averaged 50 per cent better than the best week's business in December. In one instance a dealer asserted that he had sold seven cars in February, as compared to only three sales in January.

### See General Business Revival

Dealers have kept a keen eye on other lines, and they assert they see a general revival of business, although the volume is nothing like it was in the war days. Independent steel mills in this district and in the Mahoning valley are opening, and automobile manufacturers are gradually increasing production. These signs bear out the retailers' statement about business conditions.

The depreciation of used car values also has some influence in stimulating sales. For some time the car owner has held off buying a new car in the hope that he would be offered a better figure for his used car. While he waited prices for the old cars declined. He saw dealers gradually refuse to take old cars in trades for new ones. This restricted market for used cars hurt the owner. Now they are forced in many instances to sell their used cars to individuals, instead of to dealers. But the controlling factor in increasing business was the automobile show. More and more, the consumer is depending on the annual exhibit to guide him in making his purchase of a new car.

## De Palma Second to Enter Indianapolis Sweepstakes

**I**ndianapolis, Feb. 5—Ralph De Palma is the second to enter the ninth annual 500-mile international sweepstakes of the Indianapolis motor speedway on May 30. Eddie Hearne is the only one to precede him in entering.

In filing his entry De Palma has not named the car he will drive but it is generally believed it will be a Ballot from the Paris factory.

## Service Manager Speaks to Drivers on Upkeep of Tires

### Passenger Car and Truck Dealers Co-operating in School Being Held in Cleveland

CLEVELAND, Feb. 1—Every time that a truck owner asks for an adjustment under a tire guarantee to which he is not entitled and receives the same, that truck owner is helping to keep up the price of tires, said F. C. Brown, head of the service department of the Packard-Cleveland Co., in an address to 1200 motor car drivers in the Chamber of Commerce.

The truck drivers were assembled for a session of the drivers' school, which is being conducted under auspices of the Cleveland Safety Council, of the Chamber of Commerce. It is the biggest school for car drivers ever held in Cleveland. One session brought an attendance of 1,500 drivers. The Passenger Car and Truck Dealers' Associations, the Cleveland Transportation Association, and other civic organizations are co-operating in this movement, which has developed far beyond the expectations of those sponsoring the program. Passenger car and motor truck dealers are confident that out of the school sessions will come drivers who will get more efficiency out of their motor vehicles and thus iron out many of the difficulties that the dealers have had on account of reckless driving and inattention to maintenance.

Here are some of the pointers that Mr. Brown gave with respect to the care of tires:

Ninety per cent of the tire adjustments sought should never be asked for, because tires have not been treated as they should be.

No driver can tell by merely kicking a pneumatic tire whether it is properly inflated. It must be gaged. Under-inflation causes the tire to bend and roll to such an extent that the cord plies are rendered lifeless. Over-inflation causes a loss of the cushion effect and puts undue strain on the truck.

The drivers also were instructed on trueing up wheels, on guarding against speeding, how to care for tread cuts, and cautioned against overloading.

When a tire is worn down to only an inch of rubber, the damage to the truck in trying to get an additional 500 or 1,000 miles will cost the owner more in the long run than a new tire.

The tire cost should equal the sinking fund for truck maintenance in order to get best results.

Tires like trucks are made to certain specifications and for certain kinds of work, and this should be observed.

Chains should be put in loosely, so that they may fall backward and forward and thus relieve pressure on a single part of the tire.

Use non-skid devices as infrequently as possible and only when necessary to obtain traction.

#### 49,000 G. M. C. STOCKHOLDERS

Wilmington, Del., Feb. 1.—Accompanying checks, sent out today to the stockholders of the General Motors Corp. for the last quarterly dividend, payable today, is a card from Pierre S. duPont, president, which says: "There are at present 49,035 stockholders of record, which gives the widest distribution in the history of the corporation." A comparison is also given, which shows that the number of stockholders has increased from 1,927 in the first quarter of 1917, to 36,894 in the fourth quarter of 1920.

## Show Managers at Annual Meeting See Good Season

### Reports Show Real Business From Cleveland and Milwaukee Exhibits

#### —Watching After Results

CHICAGO, Feb. 2—That the motor shows of the present season will be as well attended as ever and productive of better results than ever before was the prediction of the country's leading motor show managers at the annual meeting today of the National Association of Automobile Show and Association Managers.

Reports from Manager Fred H. Caley of Cleveland, and Bart J. Ruddle of Milwaukee, were that the shows were better attended than in any previous year and that real business resulted. The receipts in Cleveland were \$37,000 greater than last year, and a 75-cent gate charge had no effect on attendance. Baltimore, said Manager John C. O'Brien, went well ahead of last year. Manager Walter R. Wilmot of Minneapolis said the Twin Cities this year would have a wonderful show. More than 1,000,000 letters have been sent out through the Northwest by merchants. The show is styled Automobile Show and Trade Week. Hotels are already out of rooms and the Chamber of Commerce is placing reservations in rooming houses. No raise in the price of rooms is made.

A special meeting may be held in the spring if conditions make extra business promotion necessary. A keen watch is being kept on the course of business in the month following each show, and if business does not continue in good volume new promotive effort will be considered.

Harry T. Gardner, former manager of the Syracuse show, later manager of the New York association and now carriage sales manager of the Packard, was made an honorary member.

President E. E. Peake of Kansas City; Vice-President Fred H. Caley of Cleveland; and Executive Secretary Ray W. Sherman of New York were re-elected. The following were chosen directors: Prince Wells, Louisville; Robert E. Lee, of St. Louis; Walter R. Wilmot, of Minneapolis; and Chester I. Campbell, of Boston.

#### 55,000 AT PHILADELPHIA SHOW

Philadelphia, Feb. 5—Between 55,000 and 60,000 persons attended the twentieth annual automobile show here, this number breaking the record. These figures apply only to paid admissions. In commenting on the show and its results, leading members of the association expressed themselves as more highly gratified than at any previous exhibition here and asserted that undoubtedly good has come from it already in a business way. There were more purchases on the floor and more dealer applications from men seeking out distributors than ever before recorded.



To prove the earning power and number of usages to which a motor truck could be put profitably, Harold T. I. Shannon of the Oneida Motor Truck Co. crossed the country from the factories at Green Bay, Wis., to Seattle in a standard 1 1/4-ton Oneida truck. The driver and his mechanician started without any money and 83 days later arrived at Seattle with \$500 in pocket. This was earned through moving houses, carrying ore, transporting live stock and in doing various other odd jobs where a penny could be made.

## Concerning Men You Know

Herman J. Horst and Cylde L. Wilkinson, both former employees of Fred J. Barr Co., Rock Island, Ill., have opened an automobile accessory shop in Davenport, under the firm name of Horst & Wilkinson. Hood Rubber Products Co., which is transferring its Iowa agency from Davenport to Des Moines, will be represented locally by the new firm.

W. J. Foss, formerly of the Foss-Hughes Co., Philadelphia and more recently with the Pierce-Arrow organization in Buffalo, has been appointed distributor of the new Wills-Lee car that soon will be produced in Marysville, Mich. His territory will comprise Pennsylvania, New Jersey, Delaware, Maryland and the District of Columbia.

Durwood Willis has been selected secretary of the Springfield, Ill., Automotive Dealers' Association to succeed W. F. Dagon, resigned.

Thomas Wright is president of the Commerce Delaware Truck Co., which has been formed with headquarters in Wilmington, Del., to take over the state distributorship of the Commerce line of trucks.

Ernest N. Culver, for the past three years division manager of the Willys-Overland, Inc., Toledo, supervising the entire Southern division has been appointed assistant sales manager of the company.

Alfred Reeke, Nash dealer in Milwaukee and vicinity, who recently was appointed distributor of the Lafayette, will handle the lines as separate units. The present Alfred Reeke Co. will be continued as Lafayette distributor. The Reeke Nash Co. will handle the Nash line. Roy W. Osborn will serve as sales manager of the Lafayette division, and R. W. Kinsey of the Nash division. Mr. Reeke is president of both companies.

Ray F. Beach has returned to the Acason Motor Truck Co. and has been placed in charge of retail sales in Detroit and surrounding territory with headquarters at the plant.

Harter B. Hull, president of the Des Moines Motor Truck Dealers Association and for several years head of the truck sales department of the Sears Auto Co., has bought the business of the Peverill Motor Sales Co., Waterloo and will take the Dodge contract in that territory. The new concern will be known as the Harter B. Hull Co. and will handle six counties for Dodge. Mr. Hull has been succeeded as president of the Des Moines Motor Truck Dealers Association by William Gibson, of the Consiny Motor Co., Republic distributors.

J. E. Quimby has bought out the interests of his partners in the Packard Auto Exchange Co., Boston, and is now sole proprietor of the business.

A. F. Gilman has been engaged by the Metz Sales Corp., Boston, as sales manager. In addition to his duties as such he will devote part of his time to the interests of the "Dealers' Welfare Bureau," a new department inaugurated to promote the interests of all Metz dealers.

J. A. Palmer has become sales manager for the Nevile More Room Steering Wheel, Wayne, Mich., and will have charge of both sales and advertising.

R. M. Robertson, who has been in charge of the wholesale department of the Overland-Harper Co., Philadelphia, merchandiser of Overland and Willys cars since its organization, has been appointed vice president of the company, in charge of retail sales.

James K. Megee, for many years service manager of the Larson-Oldsmobile Co., Philadelphia, has been appointed head of the service department of the Henry A. Rowan, Jr., Co., Philadelphia, distributor of the Haynes car in the Philadelphia territory.

John H. Mead, formerly advertising manager of the Detroit Garage Equipment Co., has joined the staff of the Michigan State Auto School as manager of the school's student's service and supply department.

One of the features of this year's exhibition will be the showing of the Wills Sainte Claire. The new car to be manufactured by the C. H. Wills Co. at Marysville, which will make its bow to automobile lovers at the Detroit show. It is expected that more than two hundred models, from three to five of each type of car represented, will be shown, according to Manager H. H. Shuart.

### F. A. Babcock, Inventor of Electric Automobile, Dies

Buffalo, Feb. 3—Funeral services for Frank A. Babcock, credited with having been the inventor of the electric automobile, were held here yesterday. Mr. Babcock was ill at his home here for some time before his death, which was caused by a complication of diseases.

While head of the Babcock Carriage Co. Mr. Babcock conceived the idea that a self-propelled vehicle could be constructed to be operated by electricity. He started work on an invention which was completed and successfully operated on the streets of Buffalo in 1898. The appearance of the electrically propelled vehicle created a sensation.

The inventor then organized the Babcock Electric Carriage Company and a Buffalo factory was established. This firm enjoyed a flourishing business for a number of years, but with the rapid advancement of the gasoline car its business declined and the firm was finally dissolved.

### NEW SPRINGFIELD OFFICERS

Springfield, Ill., Feb. 4—The Springfield Automobile Dealers Association elected officers for 1921 at the last regular meeting, as follows: President, Rudolph Haas; vice president, James L. Elliot; secretary-treasurer, C. R. Constant; directors, Ray Wantz and R. E. Hatcher. The dates for the midwinter automobile show will be selected when Adjutant-General Frank S. Dickson suggests dates which will be agreeable to the military department of the state.

### MILLIONS FOR FORD RAILROAD.

Detroit, Feb. 5—Improvements costing between \$10,000,000 and \$15,000,000 on the Detroit, Toledo and Ironton railroad are contemplated within the next year by the Ford interests which acquired control several months ago. Preliminary work costing approximately \$1,000,000 has been completed. The plans call for rehabilitation of the road-bed and the purchase of new equipment.

### FORD DEALERS ORGANIZE

Bad Axe, Mich., Feb. 4—Ford automobile dealers from Huron, Tuscola and part of Sanilac counties have organized the Thumb Association of Ford dealers. H. B. Harder, of Pigeon, is president; C. A. Klein, of Caro, is secretary, and G. A. Tindale, of Cass City, treasurer. It is the plan to eventually organize the entire state of Michigan, the organization to be by districts, each district to be presided over by a chairman.

### March 19 Set By Dealers in Detroit for Show Opening

Detroit, Feb. 4—The Detroit Automobile Dealers' Association will stage its annual show for seven days beginning March 19 in the new Morgan and Wright building on East Jefferson avenue. The building will permit of the exhibit being held on one floor, 150,000 sq. ft. of floor space being available. As evidence that Detroit dealers are optimistic regarding the future of the industry more than seventy types of cars will be on exhibition in the passenger car department and between forty and fifty types of commercial cars.

### J. R. Emery Elected Head of Chicago Garage Owners

Chicago, Feb. 3—One hundred and seventy-five members of the Chicago Garage Owners Association and their guests attended the annual meeting and dinner of the organization at the Hotel La Salle here. J. R. Emery of the Union Club Motor Livery was elected president. Other officers chosen were as follows: First vice-president representing the electric division of the association, Fred Daniels of the Terminal Garage; second vice-president, the gasoline division, H. D. Jackson, Interstate Garage; third vice-president, livery division, E. H. Llewellyn, La Salle Garage; treasurer, H. E. Halbert, Garfield Park Garage. Mrs. G. H. Steineck is secretary of the association.

Among the speakers were W. Scott Matthews, Chicago attorney, who spoke on the decision against the state lien law and on the proposed law that will be a substitute; J. C. McDonnell, chief of the fire prevention bureau of Chicago and Edgar A. Jones, assistant corporation counsel. The toastmaster was Robert Bland, special representative of the association.

A varied program of vaudeville acts was also given.

### RECEIVER FOR SUPERIOR TRUCK

Atlanta, Ga., Feb. 3—An involuntary petition in bankruptcy has been declared against the Superior Motor Truck Co., manufacturers of the Superior truck,

## Bill of Sale Law Is Upheld By Louisiana Supreme Court

### **Virtual Deeds Must Be Recorded in an Effort to Check Automobile Thefts**

**N**EW ORLEANS, LA., Feb. 7—The state supreme court of Louisiana, sitting here, has upheld the state law, passed in 1920, regulating the sales of all automotive vehicles and ordering that bills of sale, so elaborate as to amount virtually to deeds, be passed and recorded at every sale. This law was made in an attempt to check the great number of automobile thefts throughout the state but earned the enmity of dealers and of traders in second-hand cars because of the fact that every transfer cost from two to three dollars in notarial fees. The law, however, has worked to reduce the number of automobile thefts and to increase the number of automobile thieves captured since its passage.

The matter came before the supreme court from the first city criminal court of New Orleans, in the case of the state vs. William S. Rogers, an automobile dealer. The first section of the act declares that all sales or transfers of automobiles shall be made and evidenced by an authentic act of sale, duly recorded in the parish in which the sale is made. Rogers was charged with failing to file such an act, but Judge John B. Fisher, of the first city criminal court, dismissed the state's suit, when Rogers' attorneys filed a demurrer, attacking the constitutionality of the law. Justice O'Neill of the state supreme court ordered the judgment of Judge Fisher annulled, and the case remanded to the first city criminal court for "further proceedings not inconsistent with the opinion rendered by the supreme court."

A great deal of interest attaches to the outcome of the trial of this case on its merits, both in Louisiana and in other southern states, because the automobile dealers of New Orleans are planning another test case and the legislatures of other states are considering the passage of similar laws, provided this one was upheld. The dealers are in favor of a law of this kind, but believe the records should be kept by the automobile registration department of the state government, and that the costs of two or three dollars for notarial fees should be reduced to 25 or 50 cents.

## B. A. Gramm Re-elected As Head of Motor Truck Makers

**C**HICAGO, Feb. 2—The belief prevailed at the annual convention of the Motor Truck Manufacturers' Association held in this city yesterday that the business situation in so far as the motor truck industry is concerned is already showing very tangible evidence of improvement.

The officers of the association elected at the convention are as follows: Pres-

ident, B. A. Gramm of the Gramm Bernstein Motor Truck Co.; vice presidents, J. W. Stephenson of the Indiana Truck Corp. and Frank Luick of the Sterling Motor Truck Co.; secretary and treasurer, M. Cook of the Service Motor Truck Co. The directors in addition to these officers are F. R. Thompson of the Brockway Motor Truck Co., F. G. Elder of the Day Elder Motors Corp., R. C. Stewart of the United States Motor Truck Co., O. Armleder of the O. Armleder Co., and S. A. Cook of the Diamond T Motor Car Co.

## Gymnasium and Pool for Service Station

**P**HILADELPHIA, Feb. 5—*The Lexington Motor Corp., distributor of the Lexington Six, has secured the large building of the Commonwealth Brewing Co., and will remodel it into a service station and new car storage warehouse. The building has four floors and contains over 35,000 sq. ft. of space. Besides the service station, warehouse and machine shop, the company plans to include in the building a gymnasium and swimming pool for the employees.*

## Expects Gas Price Reduction to Help Car and Truck Sales

**C**HICAGO, Feb. 3—Directors of the National Automobile Chamber of Commerce were informed by the Traffic Committee to-day that carload shipments from the factories during December were 35 per cent of January a year ago—a decided gain over shipments in the past two months.

Alfred C. Reeves, General Manager, reported that a recent extensive trip through the West had convinced him that business of all kinds was on the up-grade and that the automotive industry will share in the revival. Reeves is about to begin a similar trip through the East.

It was decided that the directors would take up with the Council and the N. A. D. A., the recent court decisions regarding confiscation of cars transporting liquor.

The director expects the recent reduction of 2 cents in the price of gasoline to help sales of cars and trucks.

## NEW HAVEN SHOW IN MARCH

**N**EW HAVEN, Conn., Feb. 2—New Haven Automotive Dealers' Association will hold its annual exhibit March 5 to 12 at the Arena. Preliminary reports on plans being made were given at the monthly meeting of the association this week. There was also an address by Frank Elliott, advertising manager of the Packard Motor Car Co. of New York on "The Ideal Automobile Dealer."

## Dealer Organization in New Orleans Now Stock Company

### **Each Member Required to Own One Share of Stock By Paying \$100 as Increased Dues**

**N**EW ORLEANS, LA., Feb. 7—Members of the New Orleans Automobile Dealers' Association have transformed their organization into a stock company, with shares at \$100 each, and each member required to own one share. At the last meeting the yearly dues were increased from \$12 to \$100. The meeting was the first of a new order of things whereby these meetings will be held on the first Tuesday following the first Sunday of each month, and was devoted largely to amending the by-laws, discussion of which was carried over to the March meeting. In addition to these monthly business meetings, the members assemble once a week at a luncheon, and these get-together meetings have proved most successful in bringing all the dealers closer together.

Officers elected to serve for the year 1921, consist of William S. Rogers, president; A. R. Robert, vice-president; Fred Oster, secretary and treasurer, and M. Frank Thomson and Gus D. Revel, directors; T. B. Moody remains assistant secretary.

Two important matters are now being considered by special committees from the dealers' association. The first and most important is the state law requiring notarial action for the sale of an automobile, passed in an effort to reduce the number of thefts of automobiles, which had become large throughout Louisiana.

## Dunlop Plant at Buffalo Will Resume Operations on April 1

**B**UFFALO, Feb. 3—Officials of the Dunlop interests at a conference here yesterday, at which representatives of the British interests were present, decided to resume operations at the Buffalo plant on or about April 1. With the \$25,000,000 plant within two weeks of completion building operations were temporarily suspended several weeks ago because of general financial and industrial conditions.

A statement issued following the conference indicated resumption of activities on the date mentioned but did not indicate what initial production is planned at the tire plant.

## PIERCE CAR BUILDER DEAD

**C**HICAGO, Feb. 5—Andrew J. Pierce, builder of the old Pierce motor car which was taken over by the J. T. Case Co. of Racine, Wis., died at his home here Saturday after suffering for nine days with pneumonia. Mr. Pierce was connected at one time with the Racine Hardware Co. and in 1892 started in business for himself manufacturing a gas engine, under the name of the Pierce Engine Manufacturing Co. This later became the Pierce Motor Co. which was sold to the Case company in 1910.

## How the Conventions Ended at Chicago



The Society of Automotive Engineers concluded its activities with a banquet at the Morrison Hotel



At the same time and in the same hotel the National Tire Dealers' Association celebrated its being brought into existence



Photographs by Kaufman and Fabry, Chicago

The National Automobile Dealers' Association held its annual trade frolic at the Hotel La Salle

## Dealer Optimism Showed Itself Here, Too



Studebaker dealers followed their business session with a banquet at the Blackstone



The Chicago show brought together many Paige-Detroit dealers, who dined at the Congress Hotel



Photographs by Kaufman and Fabry, Chicago

One of the other banquets held during the week was of Hupmobile dealers at the La Salle



# A Department of BETTER BUSINESS

*Conducted by Ray W. Sherman*

## *Customers Home Coming Week as Help to Business*

WHEN a dealer has been in business several years and has had a considerable number of customers during those years, it would be possible for him to stage a "Customers' Home Coming Week" during which he would invite all customers to visit his place of business and to register their names, addresses and article purchased in a large book provided for the purpose.

In order to induce the customers to come to the service station the dealer might present all those registering with a carnation and he might also stage a little exhibition in which he would show the first car he ever sold or a picture of it and in which he would have several photographs of customers' cars on view together with road maps and other local data. Such an event would bring together a number of motorists with the same interests—seeing that they had all patronized the same dealer—and they would have an interesting time meeting one another and chatting together. If the dealer wanted to put on a thing of this sort in style he might hire an orchestra to render music on some afternoons during the occasion.

An event like this would make an especially big hit with the motorists if it was staged just before the opening of the spring automobile season when all motorists are talking about getting out into the country again and are, therefore, especially interested in meeting other motorists and in discussing motoring topics. And, of course, the names listed in the registration book could be used for a mailing list and as a list of folks who were prospects for new cars or articles similar or the same as those they had previously purchased from the dealer.

### **Be Active in Civic Movements**

Established automobile dealers have an important position in a community and should live up to that position. They are largely responsible for keeping the automobiles of the city in running order and in increasing the transportation facilities of the city. They are constantly coming in contact with the leading men

of the city and are always making as big single sales as any class of local merchants. So why not live up to this position by belonging to the Chamber of Commerce, the leading lodges, the Rotary, Kiwanis or other business organizations and by not only belonging to such organizations as many automobile dealers now do, but by also taking an active part in these bodies by serving on committees, entering discussion at meetings and so on? The automobile dealer who does all these things and who shows that he is very deeply interested in the growth of the community where he is located, is sure to profit immensely in increased car sales.

### **Taxicab Users May Prove Prospects**

In medium sized cities there are always a large number of social affairs each winter and a good percentage of the young or older people attending these affairs go to them and come from them in taxis. Now under ordinary circumstances the folks attending these affairs are much the same crowd so it is evident that those people who patronize taxis for one social event during the winter are pretty sure to patronize them for other social events. And in this fact lies the

### **A Bigger Market for Your Ideas**

ONE idea in your own mind is one idea. That same idea given to 35,000 other men through the Better Business Department of Motor Age becomes 35,000 ideas.

Ideas help us all. They are the beginning of money-making plans. The smallest good thought may lead to a big result. Just as you are getting the good ideas of others through this department, give them a chance to get square with you by using one of yours. For the trouble of writing the idea Motor Age will send you ONE DOLLAR and you have the satisfaction of having done the industry a service.

opportunity for the dealer to get some real prospects.

The dealer can get in touch with some of the leading men who attend such affairs and from these men obtain a pretty comprehensive list of the young or older people who make a habit of using taxis. Then the dealer can go to these taxi-users and show them how it would be money in their pockets to purchase a car and be entirely free from the burden of paying a good sum for taxi fare every now and then. A dealer handling medium-priced cars would probably have the most success with such a plan as this.

### **Tag Parked Cars in Need of Paint**

There's nothing like being specific and to the point when soliciting business. For instance, suppose that a service station which makes a specialty of repainting cars, determines to solicit some car-painting work. It could have generalized cards printed up and attached to the steering wheels of parked cars which needed a new coat of paint. This method would probably get some business. But it could be more specific and to the point by having cards printed up reading like this:

"NOTICE TO OWNER OF CAR BEARING LICENSE NO. \_\_\_\_\_!

"We will repaint this car and make it as good as new for the sum of \$\_\_\_\_\_, if you get in touch with us before \_\_\_\_\_. Bring this card with you to get this special price."

Then the man who was attaching the cards to the steering wheels might fill in the license number of the car and also put down the right price for the job and date the card for a week ahead.

### **A List of New Cars for Every Dealer**

The secretary of the Automobile Trades Association of Hartford, Conn., keeps a list of used cars in the stocks of the various members of the organization and every member gets a copy of the entire list. If a prospect desires a Buick coupe and calls on a trade association firm to buy and the firm does not have it the list is referred to. The firm then calls up the other member that is checked as having the car in stock and the prospect is conveyed to the other agency.

## Attract Customers By Publishing Gist of Traffic Laws

A NY real service that a dealer can render to the motorists of his city is sure to be worth real money to him. And if this service is of such a character that it will bring his name into the minds of the local motorists for a greater or less period, then so much the better. Now, in most cities there is a very real chance for a dealer to perform a real service for the local motorists at a comparatively small cost. This chance is in the opportunity to codify and publish the local traffic laws. In most cities the motorist has no means of learning what the traffic laws of the city are until he violates some ordinance and is fined for it or unless he gathers the gist of the laws by hearsay from other motorists or goes to the city hall and reads over the original traffic ordinance.

The dealer who wishes to perform a service to the motorist could have the traffic laws neatly printed in convenient booklet form with his own name and address on the front cover and with a little sales talk for his cars and service on the inside front cover. Then he could distribute these booklets to every motorist who came to his service station and signed a card giving name and address. In this way he would distribute a large number of booklets where they would do the most good and would also obtain a good mailing list of live-wire motorists.

### Attracting Motorists to Salesrooms

One of the things that would attract owners to a salesroom would be reports of interesting trips which other motorists had taken. In any sizeable city there are always plenty of owners nowadays who are taking long or unusual trips and who are eager to talk about these trips and to show photographs which they have taken enroute. The dealer might get in touch with such people, secure the use of the pictures and then tell about the trips and show the pictures on placards which might be placed at some strategic point in the salesroom, where everyone who came into the room would be sure to see the placard.

Then the dealer might advertise the feature and urge folks to come to his salesroom regularly to see what local owners were doing. This would not only bring many motorists to the salesroom where it should be an easy matter to sell them something but it would make a lot of talk, which would be pretty good publicity for the dealer.

### Make Your Ads Serve as Sales Talks

The ready-made advertisements for dealers which are prepared and sent out by the motor companies are very fine and are a real sales aid in distributing

cars, but a little localized advertisement very often now and then will be found to be a very real help by the dealer. The dealer's advertising matter should be along the same lines as his sales talks. If he finds it good business every now and then to tell the prospect about local people who have purchased the cars sold by the dealer and how satisfied these people are and just why they purchased the cars, then it will be good business to tell the same things every now and then in his newspaper advertising. A newspaper ad is simply a sales talk in print and the same arguments which get over with a prospect in a heart-to-heart conversation will also achieve results in black and white in the newspapers.

### Know Every Angle of Business Thoroughly

It is never a wise policy to let a customer go to an outsider for any information regarding the thing the customer is contemplating purchasing. So the automobile dealer should see to it that he has on hand all the information regarding the cost of buying cars on the installment plan through finance corporations. He should have this information printed on cards so that the prospect can see it in black and white and he should be able to explain just what is included in the payments, how much the interest is, etc.

Of course many dealers operate through finance corporations in selling on the installment plan and if they can give the customer all the needed data on these plans instead of sending the customer to the corporation's office, they will be able to close sales more expeditiously and, perhaps, to make sales which they otherwise might lose through getting out of touch with the prospect.

### Washes Cars Quickly And at Any Time

The Stumpf Motor Sales Co., Fort Wayne, Ind., in pushing its service business this winter has found it very profitable to list the services rendered in its advertising and to go into details about the way it washes cars. A recent advertisement listed ten services rendered by the company, as follows: Automobile washed, automobile polished, cars refinished, tops refinished, tar removed, engines cleaned, car storage, oiling and greasing, tubes repaired.

In speaking about washing cars the company in its advertisements has this to say: "Your car cleaned spick and span, inside and out, by the most improved, progressive method—in four operations. First, the car is thoroughly sprayed and top washed; second, the wheels are cleaned with soap and kerosene; third, the body is washed; fourth, the car is chamios-rubbed and vacuum-cleaned. That's how your car will be handled when you drive it into our establishment to have it cleaned. You can leave your car to be washed while you are at the theatre or shopping."

### ONE OUT OF THREE

**D**ID you know that of the 151,000 doctors, 100,000 have automobiles? Probably the doctors present the most universally motorized class of American



#### One Out of Three

There are 151,132 Doctors and Dentists, and about 100,000 have automobiles.

Therefore, there are about 51,000 Doctors still to buy cars—one-third of the total number. These are the best prospects of any profession.

Also the hundred thousand Doctors' cars are wearing out daily. And half of them probably are open cars.

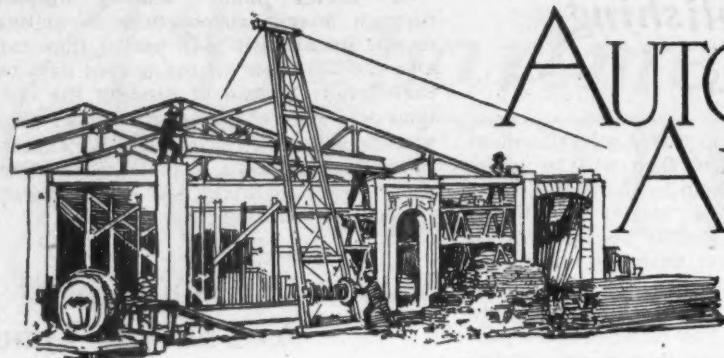
Every Doctor should drive a closed car every day.

The Doctors can give good medicine for your profits.

citizens. Yet they still have among them 51,000 or about one-third who still do not have automobiles.

How many of that 51,000 are in your territory, riding over the roads behind a horse, or using street cars and taxicabs in the city?

Make a list of all the doctors in your territory and call on them and see how they are fixed in regard to automobiles. You can spend most time, of course, with those who haven't cars. They should be called on again and again. Those who already have machines, and of course they will be in the majority, should be queried as to the age and make of their car. Old model machines, of course, should be replaced with new 1921 cars. There is no time like the winter in which to sell cars to doctors. They need coupes and sedans now and all the year 'round for they have to be out in all kinds of weather, day and night. You help in humanitarian work in selling automobiles to doctors.—General Motors Acceptance Corp.



# AUTOMOTIVE ARCHITECTURE

Planning and Building Problems

CONDUCTED BY TOM WILDER

## Getting Better Distribution of Heat by Use of Hot Air Pipes

### No. 307

I expect to build a one story frame building on piling. This is an inside lot 50 ft. by 120 ft. deep, with a two story building one one side and a three story building on the other side.

I expect to have a trussed roof with plenty of skylights and will store as many cars as possible.

At present there are about 143 cars here and only two garages.

I expect to put in about \$3000 worth of accessories parts, tires, and will have a curb pump, and an air pump. In the building I will have a vulcanizer and do repair work, and expect to employ only one mechanic at present. There will not be more than two cars in the shop at one time.

Kindly publish a plan and front view and give dimensions and specifications of

a building of this size with a shop for two cars, a vulcanizing room, accessory store for parts, tires, oils and also indicate location of air pump.

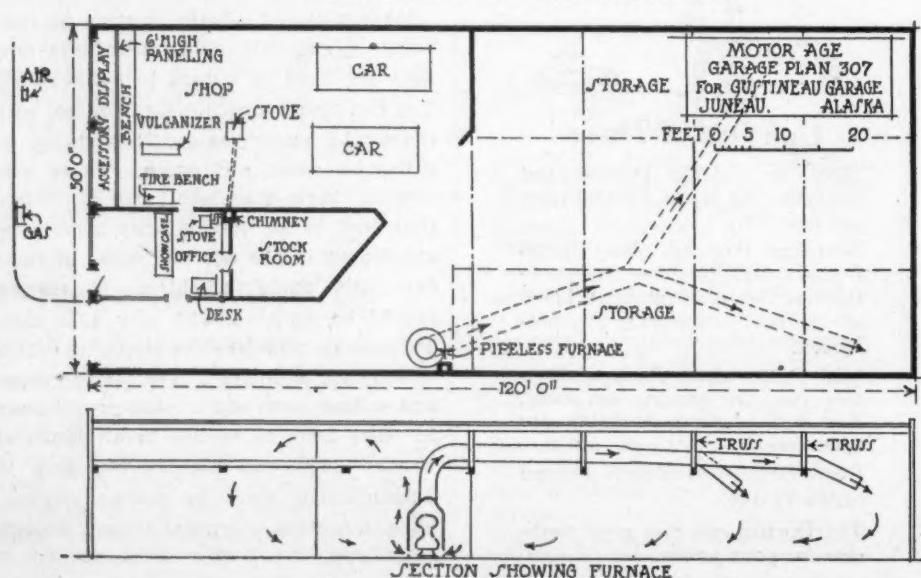
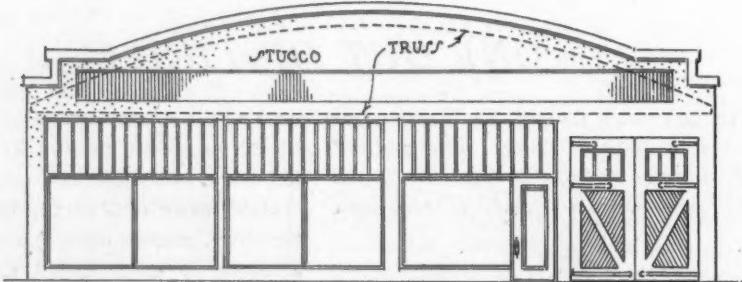
A car display room is not needed. Would like to have the shop at the front of the building, in preference to the rear.

The entrance will be in the front of the building on a street 28 ft. wide, and the repair shop, vulcanizing room, and accessory store, should be arranged in such a way that I could handle the business myself if necessary, with special reference to waiting on customers and doing the necessary work in connection with the vulcanizer.

The work rooms will be heated by coal stove. Show location of chimney and furnace for hot air, with which to heat the entire building, if I decide to install same.—Thos. McCaul, Juneau, Alaska.

We are not very much in favor of

### Frame Building on Piling



having the repair shop in front of the building. Shops are always more or less untidy looking even taken at their best. We realize your position in wanting everything centralized in order that you might do all the work yourself if necessary and have tried to make things as convenient as possible for you.

By using the front window or at least the lower part of it for accessory display you can advertise your goods, conceal the shop and still get plenty of light for the shop over the paneling at the back of the display.

A pipeless furnace or an ordinary furnace with a large open jacket would be sufficient to heat the garage and if you want to get better distribution of air, lead the hot air through some large tin pipes to the far sides of the room somewhat as shown in the sectional view. Get the pipes up as high as possible as it is the height of the vertical column of air that determines the speed of flow.

The location of the furnace is not especially recommended, but it is handy there and uses space that would otherwise be wasted.

Complications arise if you try to heat the entire building with one furnace since the temperature of the garage need be only 40 deg., while in the office and shop it should be considerably higher.

### No. 308

#### STORAGE AS SIDE LINE

Please publish plan of shop and suggest the necessary equipment and name a good reliable firm to purchase such machinery from. The accessory store, gas pumps and oil are all on the front or main street. We do our battery repair work in the basement.

I employ three men and two helpers in the shop and over-see each job myself.

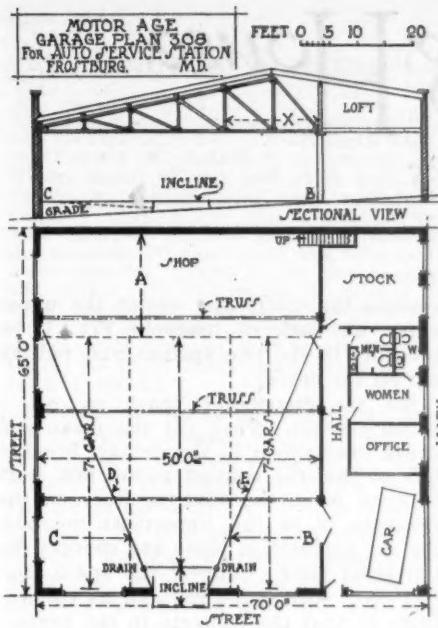
The new building is to be built of hollow tile and stucco on the outside and plastered on the inside. When you are figuring on the shop equipment kindly quote prices on same.

The only rooms needed in the garage are a shop room, small office, ladies' restroom, gentlemen's toilet, and a small stock room. Would like to arrange for a small show window, just large enough for one car in front of the office.

I realize that we are going to be crowded for storage space, but this is the best arrangement I can make under present conditions.

Manley portable garage benches will be used in the shop with single motor drive for each machine, as was suggested by MOTOR AGE—Dave Gunter, Frostburg, Md.

As we understand the situation, the building is to serve as a sales and serv-



ice station for cars with storage as a side line, while your other activities are in another building.

Your suggestions practically coincide with the best layout we can propose. The incline of the street on which the show room will front makes a little trouble, but should not be a serious problem. The best plan is to make the floor level at a height to meet the sidewalk line at the point of entrance into the show room as shown in the elevation. This will require an incline into the

garage but it will only mean a rise of 14 to 16 in.

Another good way would be to incline the whole floor from the level as shown in the section at A, B and C, down towards the entrance. There would be an imperceptible gutter at D and E leading to a drain at each side of the entrance. This slight incline would not interfere with car operations in the least but would avoid the sharp rise of the entrance.

You will probably do well not to enclose the shop. The portable benches and individually driven shop equipment will be fine, but we would rather not recommend any one make. There are several good reliable firms advertising in MOTOR AGE, which can supply all your needs. Get their catalogs and latest prices and select the best from each. As to arranging the machines, being all independent you can soon find the proper place for each.

If you can use the room to advantage it might be a good idea to have your trusses designed to carry a load as indicated at X, thus doubling the capacity of your loft.

#### AUTOMOTIVE SHOW FOR SIOUX CITY

Sioux City, Iowa, Feb. 5—Under the auspices of the Motor Trades Bureau of the Sioux City Chamber of Commerce an automotive and accessory show will be held here from Feb. 14 to 19 inclusive. The entire space in the new Goodyear Tire & Rubber Co. building, comprising 44,000 sq. ft. where the show will be held,

#### Automotive Architecture

In this department MOTOR AGE aims to assist its readers in their problems of planning, building and equipping, service stations, garages, dealers' establishments, shops, filling stations, and in fact any buildings necessary to automotive activity.

When making requests for assistance please see that we have all the data necessary to an intelligent handling of the job. Among other things we need such information as follows:

Rough pencil sketch showing size and shape of plot and its relations to streets and alleys.

What departments are to be operated, and how large it is expected they will be.

Number of cars on the sales floor.

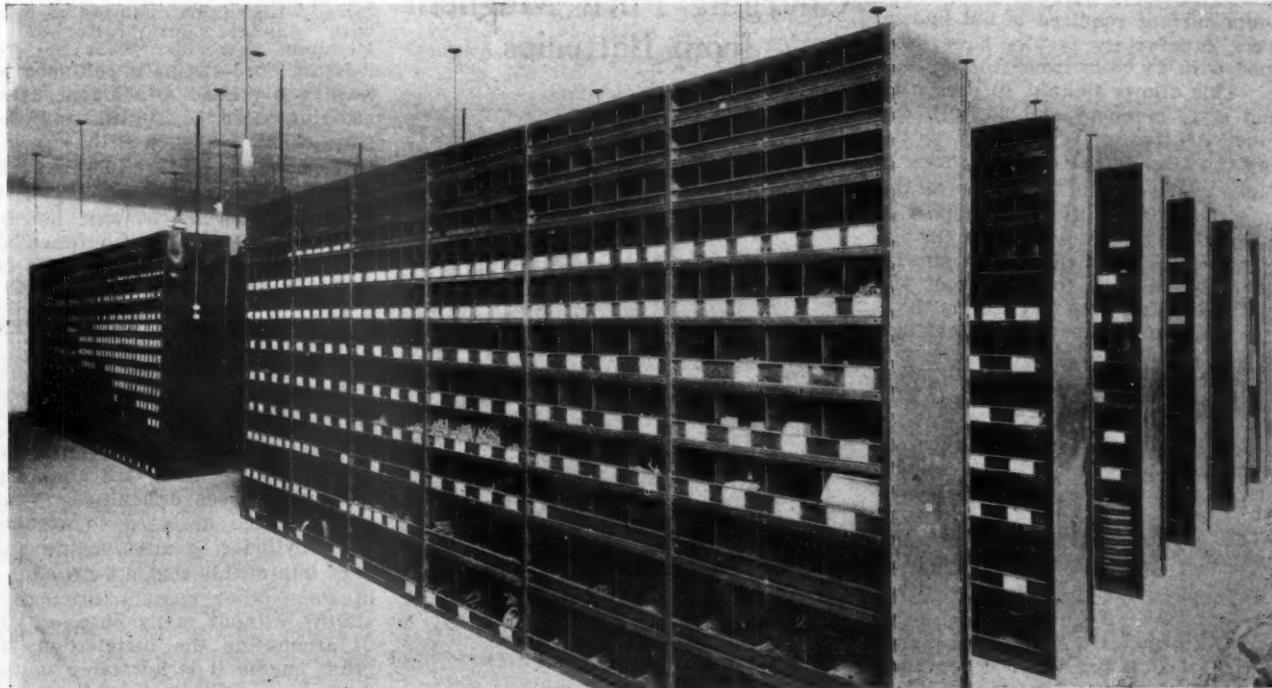
Number of cars it is expected to garage.

Number of men employed in repair shop.

And how much of an accessory department is anticipated.

will be used for exhibits. There will be several prominent speakers on Tuesday, an athletic event on Wednesday and a carnival and dance on Saturday evening.

#### *A Well Planned and Equipped Parts Department*



It is hard to imagine a more orderly arrangement of a parts department than that shown in the above illustration. This picture was taken in the stock room of the Randall-Dodd Auto Co., Buick and G. M. C. distributors, Salt Lake City, Utah. The parts cabinets are Durand make. The average inventory is \$50,000.

Note the excellent arrangement of lights

# The Readers' Clearing House

## Questions and Answers.

### CHARGING FORD MAGNETO

**Q**—Publish a diagram showing how to charge a Ford magneto from a Delco lighting system 32 volts.—H. J. De Bock, Shreve, Ohio.

Fig. 1 shows connections from a set of storage batteries connected in series. This diagram is also applicable when the Delco Light storage batteries are used. There are two ways of ascertaining when the magneto is in the proper position for remagnetizing. Get a small compass and hold it about on a level with the insulated terminal in the center of the transmission case. Hold the compass about one inch to the left of the imaginary line running through the binding post and parallel to the frame of the car, also holding it about 5 or 6 in. back from the binding post. The engine should then be turned over slowly until the compass registers at a point one inch to the left of this post.

The other way, if no compass is available, is to take the cover of the transmission case off by removing the six machine screws, and after locating the brass studs in the rim of the flywheel, turn the engine over slowly until one of them is about in line with a point one inch to the left of the binding post. It is then ready to apply current. The exact minimum current required is not known but very satisfactory results have been obtained with 24 volts from storage batteries. This allows 48 amp. to pass with the old style magneto and 96 with the new one. All that is necessary after connecting the storage batteries in series is to connect one end to the frame of the car and the other to the binding post of the magneto, taking care to break the arc so formed on opening the circuit slowly, and also make sure to disconnect the lights and coil from the magneto as these may be burned out because of the high voltage used.

#### MAGNETO SETTING

**Q**—Publish wiring diagram of the 1911 model M Chalmers.

**2**—Explain how to make the magneto setting.

**1**—The wiring diagram is shown on Fig. 3.

**2**—To explain the magneto setting we shall assume that the magneto has been removed from the car. Crank the engine until No. 1 piston has reached top dead center on the compression stroke. This point is reached when the mark on the flywheel D C 1 and 4 is in the center hole in the top of the clutch casing. Before placing the magneto on the car,

CONDUCTED BY ROY E. BERG

Technical Editor, Motor Age.

#### The Readers' Clearing House

**T**HIS department is conducted to assist Dealers, Service Stations, Garagemen and their Mechanics in the solution of their repair and service problems.

In addressing this department readers are requested to give the firm name and address. Also state whether a permanent file of MOTOR AGE is kept, for many times inquiries of an identical nature have been asked by someone else and these are answered by reference to previous issues. MOTOR AGE reserves the right to answer the query by personal letter or through these columns.

#### Charging Ford Magneto from Batteries

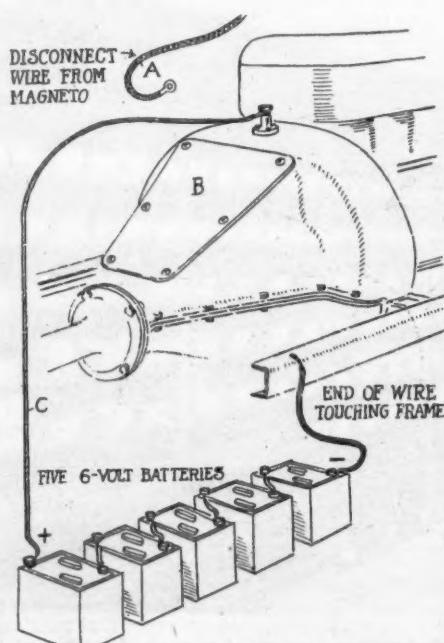


Fig. 1. Method of connecting storage batteries

remove the distributor cover, the upper cover on back of magneto Fig. 3, by pressing in the two springs and pulling out on the cover.

Set the distributor brush on No. 1 metal contact. Then set the make and break mechanism in the contact breaker box so that the contact points just start to open when the advance lever on the magneto is in the uppermost position. Set the magneto in place and connect the universal joint. Connect the spark control rod. Adjust the rod and its connections so that the contacts in the contact breaker box just start to open when the spark lever on the steering wheel is placed at O with the piston on upper dead center. If the make and break does not occur at the proper time go over the above instruction again.

In making the wiring connections refer to Fig. 3.

The magneto to switch wire goes from binding post on the contact breaker box to the post on the back of the spark coil marked M. This wire connects with the switch by which the magneto ignition is turned off or on.

#### FORD REBUILDING

**Q**—What speed should be obtained by equipping Ford engine with 8-valve overhead attachment, Atwater Kent ignition, counterbalance and  $2\frac{1}{2}$  to 1 ratio? What size carburetor would give best results,  $1\frac{1}{4}$  or  $1\frac{1}{2}$ ? What speed ought to be obtained with engine equipped as mentioned with standard gear ratio?—E. F. O. Mechanic, Subscriber, Knoxville, Tenn.

If the Ford engine is equipped with an 8-valve overhead attachment carburetor size increased to  $1\frac{1}{4}$  in. and the gear ratio changed to 3 to 1, the car ought to make about 65 m.p.h. It is impossible to install gears that will a  $2\frac{1}{2}$  to 1 ratio without changing the axle housing. If the car is equipped as outlined and the standard gear ratio is used, the car will probably make between 55 and 60 m.p.h.

#### INTERCHANGING ENGINES

Could a Stearns-Knight eight cylinder engine be replaced with some other six cylinder engine? Would it be necessary to change the clutch and fly-wheel?—Harry H. Long, North Andover, Mass.

It must be remembered that an attempt to interchange units will always involve some unforeseen difficulties. This chassis has been designed to accommodate the 8-cylinder Stearns engine and it is very improbable that a 6-cylinder engine of some other manufacture can be installed without many changes. Instead of attempting the installation of some other engine it is advisable to take the matter up with the engineering department of the Stearns Motor Car Co. and see if it is not a cheaper and better proposition to install a new engine of the same kind.

## Difficult Starting Caused by Many Things

A 1912 model Overland equipped with a new Simms H.T. DU. U.4 magneto and a new model R. Schebler carburetor and Wilmo manifold, will not start until hot water is poured over the carburetor. Priming with ether will not start the cold engine. Outline possible cause of the trouble. The magneto has two extra posts marked + and - on the breaker box which are for using a battery to aid in starting if desired. Publish a wiring diagram showing how to connect switch, batteries, coil and breaker box?—Ralph A. Scott, Rock Falls High School, Rock Falls, Ill.

It must be borne in mind that hard starting and missing, either at high or low speeds, can be caused by many things, and the following should be inspected in the order of rotation as given below, when making an examination of engine. While we do not recommend any particular make or type of plugs, we strongly recommend that you use good ones. A cheap and inferior plug is a constant source of trouble and annoyance.

It is very necessary that the plugs are clean, and if fouled with oil or carbon, should be taken apart, scraped and washed in gasoline. Few people realize the importance of careful spark plug adjustment, and this point cannot be too strongly emphasized. The gap, or distance between the two electrodes should be .020 to .023—no wider. This setting has been found by experience to be the most satisfactory, and give the best results under all operating conditions. A spark plug should never be used without first being gauged.

The fact that the engine will start easily when hot water is poured over the manifold seems to indicate that the length of the manifold and the carburetor adjustment is largely responsible for the trouble. The length of the manifold between the carburetor and the intake ports will allow a large amount of condensation when present-day fuel is used. Hard starting may also come from air leaks. Air leaks around manifold, gaskets or valve caps can be easily located with the aid of gasoline. This method is too well known to need further explanation, but it must be borne in mind that even a small air leak will render starting extremely hard.

If you think that the magneto is at fault and not firing, try the following simple test. While the engine is running, disconnect one of the high tension cables from spark plug, being careful not to touch the metal terminal, and hold the cable with the terminal close, about  $\frac{1}{8}$  to  $\frac{3}{36}$  in. to any part of the engine. This will show the strength of the spark and each cable may be tested in turn. If the magneto is not delivering a good spark, examine the contact breaker. The break or gap between the platinum points, when open due to the cam action, should correspond to the thickness of the gauge furnished, which is approximately .015.

If the break is wider or closer adjust accordingly. However, the contact breaker is adjusted correctly before the

ized product like the Ford and Fordson, a burning-in machine is a valuable piece of equipment for any service station. With such a machine one may burnish up the bearings for an engine with inexperienced help and do the work as rapidly and as perfectly as though done in a factory with experienced men.

2—End play in the crankshaft may be detected by the thumping sound which occurs when the engine is running idle without load. The noise will be a heavy one in character. If the bottom pan of the engine is removed, the crankshaft may be moved from side to side by prying it with a small bar or screwdriver.

3—The valves of any engine may be timed without reference to any marks or characters whatsoever if one bears in mind the principle of operation of the four-cycle engine. The first stroke down of the piston is always the intake stroke. During this stroke the engine draws its charge in, consequently the intake valve must begin to open at the time the piston starts its descent. Generally the intake starts to open when the flywheel has turned about one inch beyond the upper dead center mark measured on the periphery of the flywheel. With these facts in mind it is only necessary to disengage the camshaft gear from the crankshaft gear and then turn the engine over until the piston of say number one cylinder is on top dead center. Then turn the engine further in the same direction until the periphery of the flywheel has passed the dead center position by one inch. The camshaft should then be turned in the direction of its natural rotation until the intake valve of number one cylinder is just at the point of opening. The gear of the camshaft should now be tightened in place meshing with the camshaft gear and the engine is timed. The other valves will follow in their natural order.

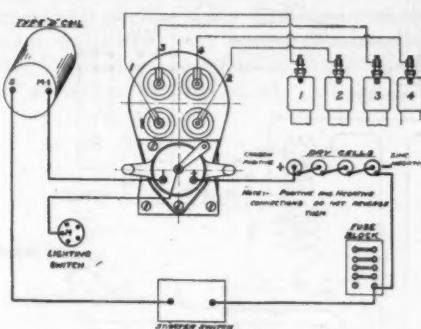


Fig. 2. Wiring diagram of an ignition system employing a Simms magneto

magneto leaves this factory, and under ordinary conditions will not require any further adjustment in one year's service.

Fig. 2 shows the wiring diagram of the dual high tension system. You will note positive and negative binding positions referred to. The positive connects with the battery positive and the negative runs to the connection on the coil marked M-1.

### TIMING THE ENGINE

Q—What do you think of burning in bearings on engines?

2—How can end play in the crankshaft be detected by running car?

3—Give the easiest way to time the valves on any engine without using flywheel mark. When the exhaust valve in the first cylinder is about to open, where must the piston be placed?—A Subscriber, Algoma, Wisconsin.

1—The burning-in process for finishing bearings is nothing more or less than a wearing-in process. Where one has a good deal of work to do on a standard-

## Wiring Diagram of 1911 Chalmers, Model M

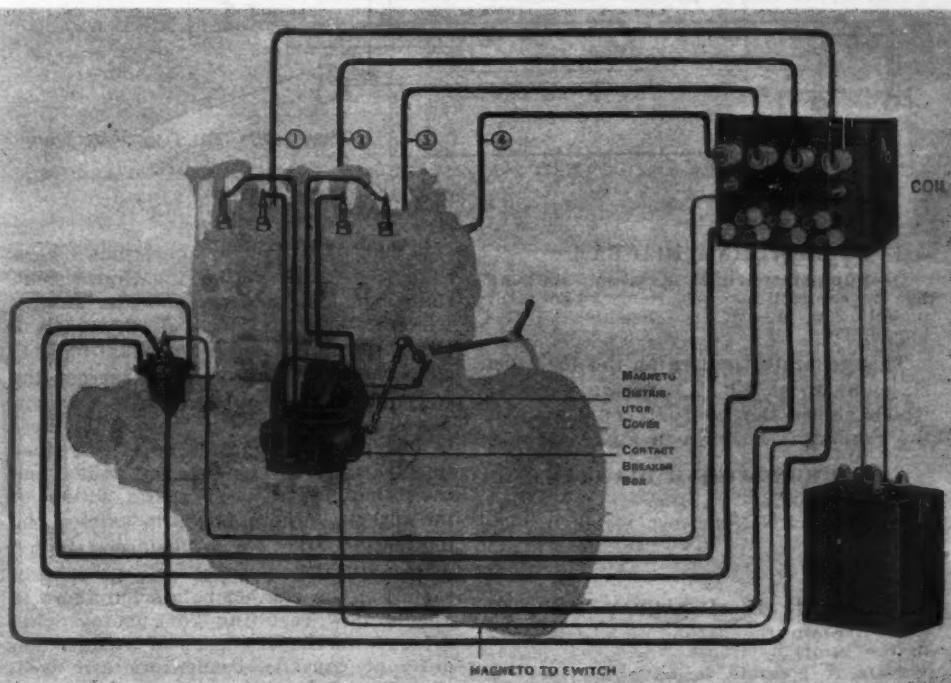


Fig. 3. Pictorial view of ignition system

## 1917 Reo Generator Showing Internal Connections

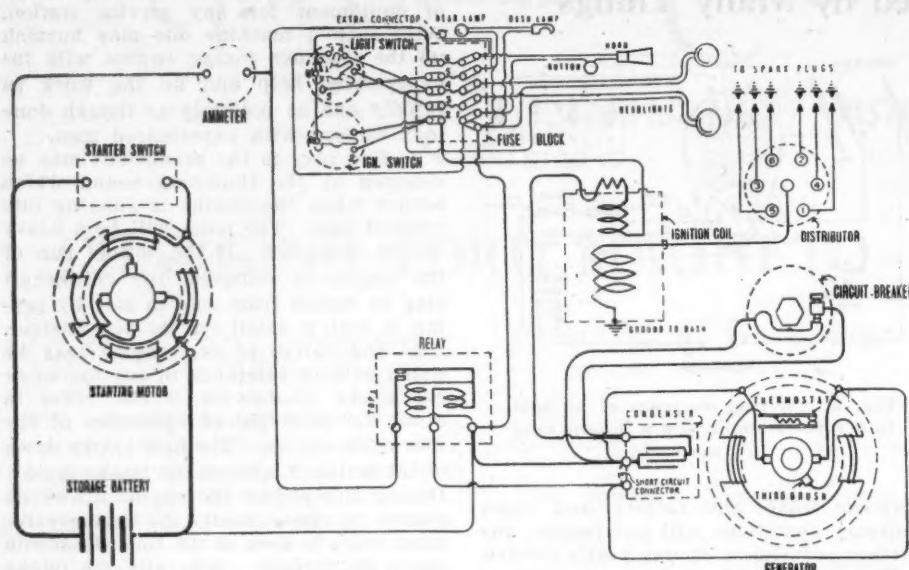


Fig. 4.

## Wiring Diagram 1913 Marmon—North East System

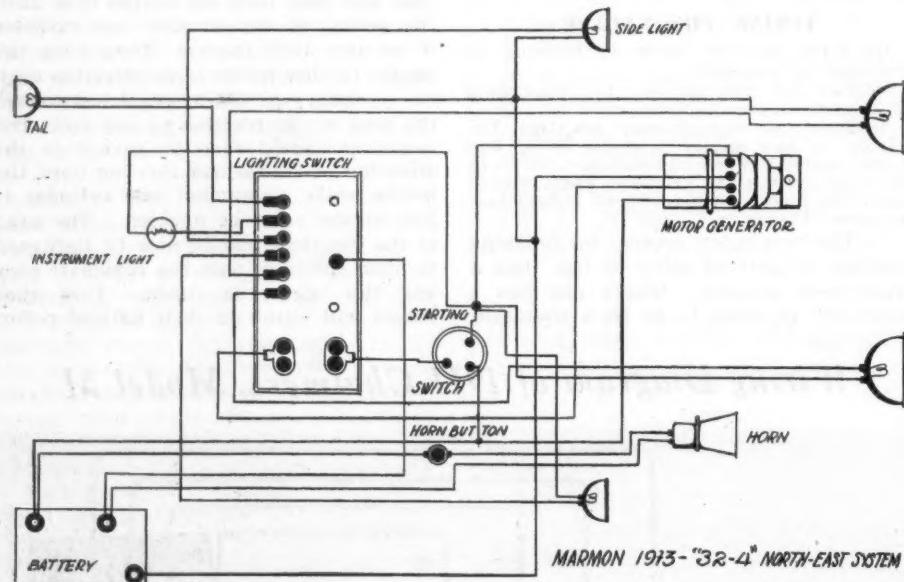


Fig. 5.

### REWIRING DIAGRAM

**Q**—Publish wiring diagram showing brush connections of Remy generator model 256 A.—H. G. Koehler, Pittsburgh, Pa.

This generator is used on the 1917 Reo six-cylinder models. A wiring diagram which shows the internal connection of the generator is shown in Fig. 4.

### MARMON WIRING DIAGRAM

Publish wiring diagram of 1913 Marmon "32" with Northeast starter-generator.

See Fig. 5.

### CONDENSER IN IGNITION CIRCUIT

**Q**—Explain the action of a condenser in the ignition circuit.

**2**—Is it possible to have too large a condenser in the secondary circuit?—King's Trail Garage.

—The above two questions were asked the Readers' Clearing House some time ago, and inadvertently the answer which appeared Dec. 30 issue last, might have created erroneous impressions. The following is to correct the statements made at that time: A condenser serves two very important offices in the ignition circuit. One is to reduce the sparking at the breaker points and the other is to amplify the action of the circuit. There formerly existed the impression that a condenser served primarily the purpose of preventing racing at the contact points but there is a belief now, resulting from photographic evidence of the discharge of a coil when different capacity condensers are used, that the other purpose of amplifying the sparking capacity of the coil is just as

important as the other function, even though it is impossible to operate a set of points for very appreciable periods with sparking contacts.

If one imagines a condenser as a rubber diaphragm bridged across a valve, and that electricity passing is much like a ponderable substance, for example water, then a very good impression of the condenser will result. Let us assume that the water passing through the valve is rushing by at a great velocity, which with its weight it has considerable stored up energy in it. When the valve is suddenly closed the rush of the water passing through the valve is accordingly stopped which will result in a great strain on the pipes. But since the rubber diaphragm is bridged across the valve there will be a gentle yielding to the pressure created through the sudden stoppage thus relieving all the strains. A condenser does not function exactly as the rubber diaphragm does, but the analogy is sufficiently close. To carry the analogy still further, let us assume that the valve is being opened and closed at regular intervals, corresponding to the natural swing or period of the rubber diaphragm.

In other words, we must assume that the surging in the passage of the rubber diaphragm, created by the opening and closing of the valve is just in harmony with the tendency of the diaphragm to vibrate. As the valve is closed the sudden stoppage of the water will cause the inertia of the water to push the diaphragm outwardly. Then as the valve is opened the water will start its rush through the valve, but assisted because of the tendency of the diaphragm to react.

The flow of current when the breaker points are open and closed is shown in Fig. 7. At the instant the points open the condenser is charged, and at the instant that the points close the condenser discharges back through the points thus causing the circuit to be "boosted."

Thus it is seen that the diaphragm or the condenser will give a boost to the circuit at the moment the points are again closed, which aids greatly in increasing the rapidity of the action of the circuit.

—It will be seen that if a condenser was used that is extremely large, its action would be so slow that it would not be able to assist the circuit with its "boost." We do not mean to imply that a large condenser is any slower than small condensers in its action, but if the condenser, or let us say diaphragm was so large that it took an appreciably longer period to fill it, then there would be but a very feeble response from the condenser at the time the breaker points are closed. However, a very large condenser would deaden the sparking at the contacts. It should be remembered that the time periods discussed here are very small, which will be appreciated, if we take as an example a high speed twelve cylinder engine traveling at 3000 r.p.m. With each row of six cylinders fed from a separate breaker the sparks per minute per breaker will be 9000. Between each 1-9000 part of a second the condenser

is charged and discharged, so it is seen that the action is very rapid.

#### PAIGE CLUTCH AND AXLE

**Q**—Have a Paige roadster 6-39, Dartmore No. 98184, with clutch running in oil. Have just washed out the clutch with kerosene and put in fresh oil, 2/3 medium and 1/3 kerosene. Since doing so is quite hard to get the gearshift lever into first speed or reverse and while the clutch pedal is fully depressed the car will move when the lever is forced into either shift. The gears will grind and the lever has to be given considerable jerk. When making change from one gear to another the lever acts as if it were stuck and considerable pressure must be applied before the lever will leave the shift it happens to be in at the time. When changing gearshift lever from first to second or third the car will halt like the brakes had been suddenly applied for a second or so. The clutch slips when gear change is made on a pull. How can the clutch be adjusted to remedy this slipping?

**2**—There is a growling noise in the differential or transmission while backing up, also when the power of the engine is eased off and the car is outrunning the engine or when the engine is cut off and the car coasting. When the engine is pulling, everything is quiet. Sometime ago a new left axle shaft was put in and the differential had to be removed to get the broken piece out. The ring gear and the pinion gear will cut ordinary writing paper, but the cut is at the edge of the teeth and not on the sides. Have tested rear end of propeller shaft for looseness but failed to find any play. Explain how this trouble can be remedied.—Paul D. Kern, Sherman, Tex.

**1**—If a clutch has been giving good service and suddenly develops a tendency to slip it is a pretty good indication that the clutch is in need of adjustment. However, before making any adjustments it is advisable to drain out the old oil and wash the clutch thoroughly with about 1 pt. of kerosene. This can be easily accomplished by turning the engine by hand until the plug you have removed is directly at the bottom. Allow the oil to run out and again turn the engine until the plug is in a vertical position. The disks may be washed by replacing the plug and then allowing the engine to idle and at the same time work the clutch in and out.

Then remove the dirty solution, rinse thoroughly with kerosene and refill with the required amount of oil. Since you have the correct proportion of oil and kerosene there are two courses to follow. First try and thin the mixture by drawing out some of the mixture and introducing an equal amount of kerosene. If this fails to give smooth action it will be necessary to increase the spring tension by screwing up all of the adjusting studs evenly all around. Be careful

to see that each stud is turned an equal amount for an unevenness in tension will result in a jerky action. If tightening fails to remedy the fault it is best to loosen all of the studs and then tighten them until the best action is obtained. The procedure applies to practically all clutches running in oil. An illustration

E free to be moved in or out and they in turn control the location of the differential assembly.

The ball thrust bearings which carry the differential and the differential thrust are located inside of the adjusting nuts E. Split collars F which hold the axle shafts in position may be loosened in

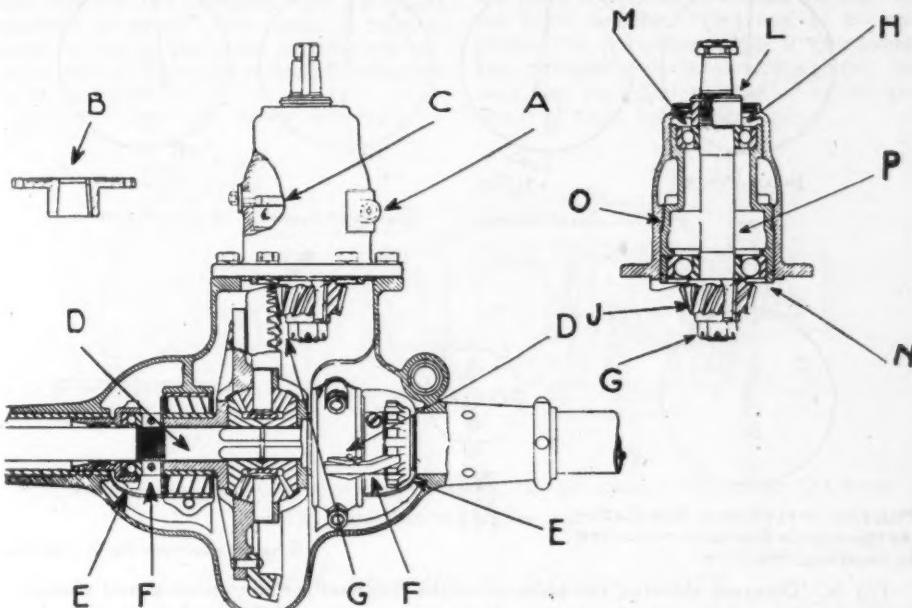


Fig. 6. Sectional view of the Paige rear axle showing the points of adjustment

of the Paige clutch is not available but if the prescribed methods of adjustment are carried out smooth clutch action will probably be obtained.

**2**—Back lash between the gears is probably responsible for the noise. If no noise is noticed when the car is accelerating but becomes prominent when the car is coasting it indicates slack between the teeth or a loose gear. To remedy the trouble we advise checking the adjustments outlined as follows: To properly adjust the differential remove the cover of the axle housing and examine the meshing of the pinion with the ring gear. The inside edge of the gear teeth should come flush with the rear end of the pinion teeth at the point G.

To adjust the pinion gear in or out first loosen the cap screw A. Second remove the cap B which will expose the castellated adjusting sleeve which is threaded with a right hand thread. Turn this to the right or left as the case may require. To shift the differential refer to Fig. 6. First remove the locks D which leaves the castellated adjustments

case the differential cannot be shifted readily. When reassembling be sure that all locks, adjustments and covers are replaced and tightened up properly.

End thrust may be taken up on the pinion shaft bearings by lock nuts located above the bearing M. The bearing N takes the thrust of the pinion gear J which is fitted to the taper on the shaft P and held in position by the Woodruff key and castellated nut G. The fact that the gears will cut a piece of ordinary writing paper at only one point seems to indicate that the gears are having a one point contact. Best results are always obtained by trial and therefore we advise checking the adjustment carefully and see if an adjustment cannot be obtained that will give a quiet running axle.

#### GENERATOR CHARGING RATE

In the December 30th issue of MOTOR AGE on page 39, under the heading of Regulator Trouble, a statement was made that the charging rate of the generator on a 1917 Maxwell car should be adjusted to between 13 and 15 amp. This charging rate is about correct providing a 6-volt storage battery is used but since the standard system uses a 12-volt storage battery, the charging rate should not be more than 4 or 5 amp. as a maximum. This is because of the fact that the higher the charging rate the greater will be the amount of heat generated in the battery and inasmuch as twice the normal rate has been found to develop ruinous temperatures, it is apparent that 13 or 15 amp. would damage the battery.

Better battery service is always obtained when it is possible to get satisfactory functioning of all the electrical units with a low charging rate.

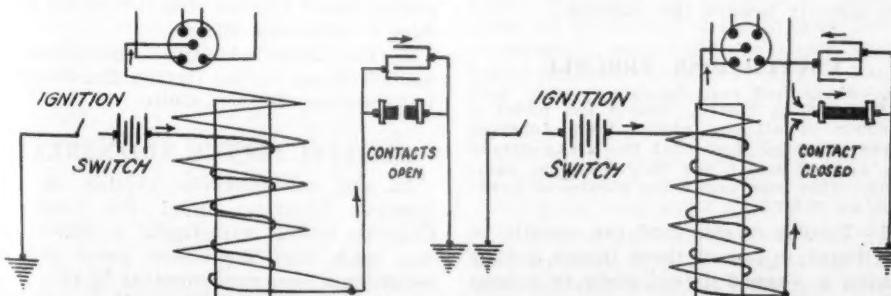


Fig. 7. Diagram showing the path of current when the contact points of an ignition system are open and when they are closed

## Valve and Ignition Timing Diagram for 1917 Hupmobile Model N

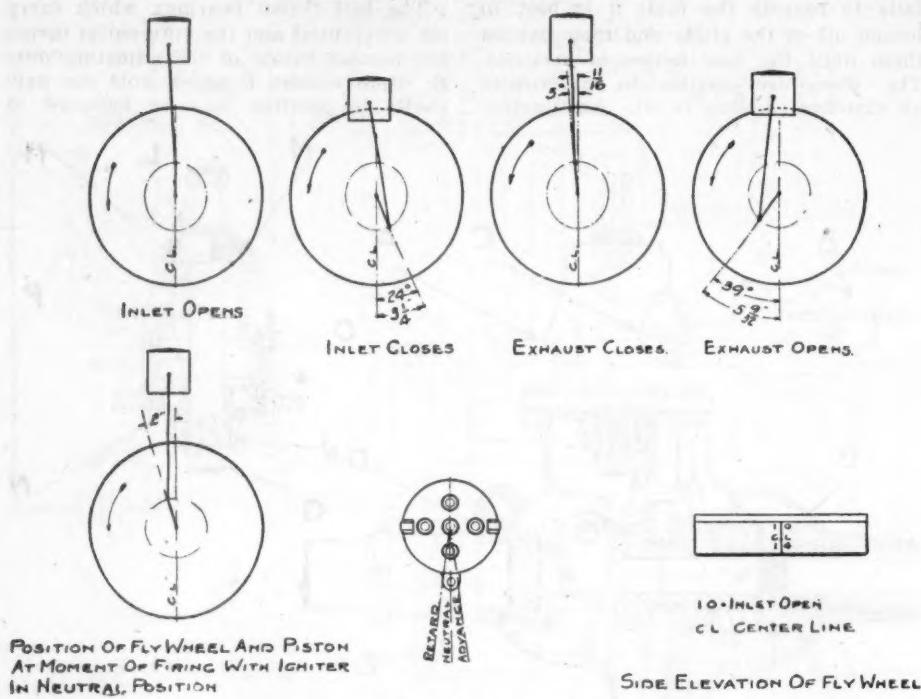


Fig. 9. Diagram showing the position of the flywheel for the opening and closing of both inlet and exhaust valves, and also the position of flywheel for timing the spark

**Q**—The clutch on a 1917 Model N Hupmobile is slipping. Does complete clutch have to be renewed?

**2**—Is it possible to get cast iron pistons of the same weight for this car and where can they be obtained?

**3**—Explain valve timing marks on flywheel—H.L.A.—Harry L. Arter, Connell, Wash.

**1**—This clutch is of the multiple disk type saw steel disk running in oil. No adjustment for spring tension is provided. When the clutch is released to the full throw of the clutch pedal a clutch brake operates to assist in stopping the transmission gears and allowing the change of gears to be made easily. The only clutch adjustment is in the throw-out control. The clutch pedal operates on a trunnion shaft, with trunnion lever connected directly with a connection to the clutch-cam lever, which bears against the end of the clutch push rod extending through the transmission case to the clutch throw-out yoke.

The clutch cam lever is provided with holes at different distances from the cam which arrangement changes the pressure necessary to disengage the clutch and also change the distance necessary for the clutch to be thrown out before the clutch brake will become operative. When the clutch trunnion connection is made at the lower hole in the clutch cam lever, a little more pressure is required to disengage the clutch, but the clutch will operate more quickly. When the connection is moved to a higher hole, less pressure is required to disengage the clutch but the brake will operate more smoothly. This adjustment may be changed to suit the convenience of the driver. It would be advisable to clean

the clutch out thoroughly with kerosene to remove any sticky oil that may have accumulated on the disks.

**2**—The addresses of piston manufacturers can be obtained from the advertising columns of MOTOR AGE.

**3**—Details concerning the valve timing of the Hupmobile model N are shown in Fig. 9. The diagram gives the position of the flywheel for the opening and closing of both inlet and exhaust valves and also gives the position of flywheel for timing the spark. In following out this diagram proceed as follows:

1—Set the crankshaft with No. 1 piston on top dead center. Set the camshaft so that the exhaust valve on No. 4 cylinder is just closing and inlet valve No. 4 is just beginning to open.

2—with the crankshaft and camshaft in this position slip on the timing chain and connect it.

3—Place the spark lever in neutral position on the steering wheel sector. Move the flywheel 2 in. past dead center and set the uni-sparker in such a position that the breaker points will just trip or break with the distributor block pointing directly toward the radiator.

### CLUTCH DISK TROUBLE

**Q**—Have had considerable trouble with a 1918 Dodge clutch. When the pedal is thrown in all the plates keep turning. Have adjusted it so that the disks spread far enough apart but they keep on spinning. Can you suggest a means of overcoming this?

**1**—Trouble of this kind can usually be attributed to one of three things, greasy plates, a warped driven plate or a bent spindle. The first thing to do is wash out the clutch thoroughly with kerosene

which will correct the trouble if it is caused by greasy plates. If this fails examine the driven disk which is a very thin steel disk. If found badly worn or warped it should be replaced with a new disk. It is advisable to examine the spindle next as a bent spindle will cause the disks to bind and keep spinning when the clutch is disengaged. Should the above outlined corrections fail to remedy conditions it will be necessary to entirely dis-assemble to the clutch to locate the cause of the trouble.

### CHEVROLET SERIAL NUMBERS

Publish, oiling chart for the model H-3 Chevrolet roadster.

**2**—Is there any difference in the chassis of a Chevrolet H-3 and a Chevrolet H-2 or is the difference in the body design only?

**3**—Give serial numbers of all Chevrolets and in what year each series was built.—G. J. Wilson, Milwaukee, Wis.

An oiling chart of this particular model is not available.

**2**—There is practically no difference in the two chassis.

**3**—Previous to 1917 the engine number was used as the serial number and could be found on the front engine arm. Following is a list of the serial numbers:

Year	Model	Cyl.	Serial Numbers
1917	490	4	2-1 to 2-36486
	D	8	2-1870 to 2-4095
	FA	4	2-1032 to 2-4117
1918	490	4	2-36487 to 2-59958
	D	8	2-4096 to 2-7746
1919	490	4	2-4118 to 2-7432
	FB	4	2-59959 and up 2-100 and up

A book containing all of the serial numbers of the various makes of cars can be obtained from the Insurance Field Co., 951 Insurance Exchange Building, Chicago.

### INCREASING COMPRESSION

**Q**—A Continental engine has been re-bored to five thousandths inch over-size. Would any more power be gained if the bottom of the cylinder block was planed off and would you advise such a change?

**2**—Publish address of the manufacturer of the Delco starting motor.—C. J. Schofield, Oakland Beach, R. Island.

**1**—If the bottom of the cylinder block is planed off the compression would be increased and consequently more power would be obtained. However, care must be taken not to raise the compression too much as it may result in difficult starting and cause a bad fuel knock. If the engine is functioning well we believe it would be advisable to change the compression. Increasing the size of the bore will lower the compression but it will be such a small amount that it will not produce a noticeable effect.

**2**—The Delco electrical equipment is manufactured by the Dayton Engineering Laboratories, Dayton, Ohio.

### CADILLAC CLUTCH ADJUSTMENT

In the miscellaneous section of the Readers Clearing under the head of Cadillac clutch adjustment a statement was made that the clutch pedal should be given a free movement of  $\frac{1}{4}$  in. The proper adjustment calls for a free movement of  $1\frac{1}{4}$  in.

## Adjusting the Rear Axle Assembly

Q—Publish power curve of the 1919 Nash engine.

2—There appears to be a slack in the drive. How much play should be allowed in the rear axle assembly?

3—What can be done to prevent oil from leaking through the front main bearing of the engine?—M. A. Carpenter, N. Syracuse, N. Y.

1—The power curve of the 1919 Nash appeared in the Nov. 11 issue of Motor AGE.

2—If you suspect that the rear axle assembly is in need of adjustment we advise the following procedure: The first adjustment that should be tried is shifting the drive pinion backward or forward as the particular case may require. If the trouble is caused by too much slack between the gears there will be a noticeable hum. If gears are set too tight a noise will result when the car is accelerated or running at a constant speed. To make the adjustment of the pinion it will be necessary to remove the pinion shaft bearing nut lock (33) Fig. 10, located just back of the universal joint on top of the differential housing.

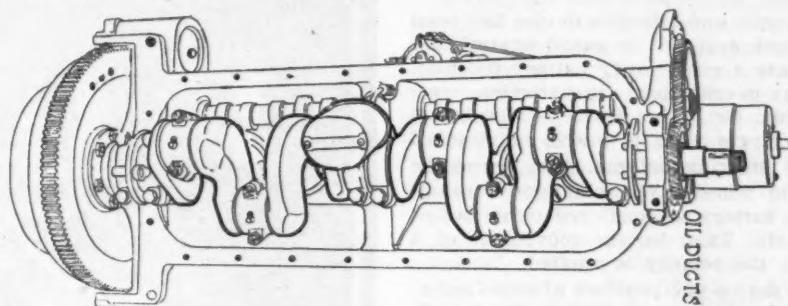
The best results are obtained when the heel of the drive pinion is in line with the heel of the bevel drive gear. It may be necessary to remove adjusting nut (34) one or two notches, whichever way will give the best results. In changing the position of the pinion shaft and gear, it will be necessary to tighten or loosen lock nuts at the front end of the pinion shaft. If the pinion be set closer to the bevel gear the nuts should be loosened first, or, if set away, the nuts should be tightened to take up the end play. The bearing adjusting nut is accessible through the opening made by removing the lock (33). The heel of the gears can be seen by removing a large plug in front end on the left side of the differential housing.

If it is necessary to adjust the bevel

drive gear (2) remove the differential carrier cover (45). The best results will be obtained when the pinion and gear are set close allowing no backlash. To adjust the bevel gear loosen the bearing adjusting nut (8) on one side and tighten the one on the opposite side an equal number of turns. The point of adjustment at which the most satisfactory results will be obtained is best determined by actual trial.

3—There are oil ducts provided to

carry the oil back into the crankcase. If these ducts are plugged up the oil in the timing gear housing will rise above its normal level and the oil will work out around the shaft. This is undoubtedly the cause of the trouble and we advise therefore cleaning these oil passages thoroughly. If, however, the ducts are open it may be necessary to take up the front bearing. This can be accomplished by removing some of the shims and tightening up the bearing caps. Be sure that an equal number of shims are removed from both sides.



Exposed view of the Nash crankshaft showing the oil ducts leading from the front main bearing into the timing gear housing

## Boiler Capacity of Steam Cars

Q—Will a boiler of the continuous flow type used in the Standard steam car produce more steam and produce it faster than the boiler used by the Stanley steamer?

2—Publish a view showing the boiler and engine of the Richard Carter automobile described in the Nov. 11th issue of the Motor AGE.

3—Will the boiler in the Bryan light steam tractor furnish enough steam to develop 70 hp. on the belt for which it is rated?

4—What is the reason there has not been any engine manufactured for truck or tractor using the Hvid type of engine?

5—What is the efficiency of the semi-Diesel type engine compared with the regular type gasoline engine?—N. H. Hormel, Oakdale, Penn.

1—Boiler capacity in the main is determined by two factors, one the heating surface exposed to fire and the efficiency of the boiler material as regards its ability to transfer heat. The Stanley boiler is of the fire tube type and the boiler in the Standard steam car is of the water tube type. Because of the larger volume of water kept in the Stanley boiler, it will necessarily be a little slower in getting up steam, considering firing temperatures and quantity of oil burned as being about the same in both cases. This slight disadvantage however is quickly offset by the ability of the Stanley boiler to maintain more stable pressures under heavy loads and cessations of these loads.

2—A view of this boiler is not available.

3—Yes, we believe that the boiler in the Bryan steam is conservatively enough rated to do what you describe.

4—Trucks and tractors must be fitted with engines capable of working fairly satisfactorily under all loads and speeds. The Hvid engine using a rather high compression and having its fuel injected

into the cylinder in measured quantities rather than with a carbureted mixture, is not handled with the same ease under all loads and speeds, as is the regular truck and tractor engine.

5—The thermal efficiency of the semi-Diesel engine will naturally be higher than that of a standard type of automotive engine, because of the fact that the engine operates on higher compression pressures and consequently higher operating temperatures. It is rather difficult to give any exact figures on the comparative efficiencies of these engines for definite figures are not available on a great number of engines. However, a Class B truck engine registers a thermal efficiency of 22 per cent between the speeds of 800 and 1000 r.p.m. Some Diesel engines have been known to have efficiencies of about 30 per cent.

### CLEANING SALVAGED PARTS

Q.—What is the best method of cleaning parts in wrecking cars.

1—There are several cleaning processes that work out very efficiently in cleaning up salvaged parts. At present there is a product on the market that is placed in a vat and the dirty parts are dipped. The solution is kept hot, and the results obtained are very similar to those which might be obtained from a hot lye solution. One of the commercial products which gives very satisfactory results is known as Oakite manufactured by the Oakley Chemical Co. 22 Themes St. N. Y. A water and air system for cleaning parts was recently installed in a St. Louis service station. The claim is made that it is possible to clean an engine in five minutes with this system. Air pressure of 150 lb. is combined with the city water pressure and properly adjusted to give the best results.

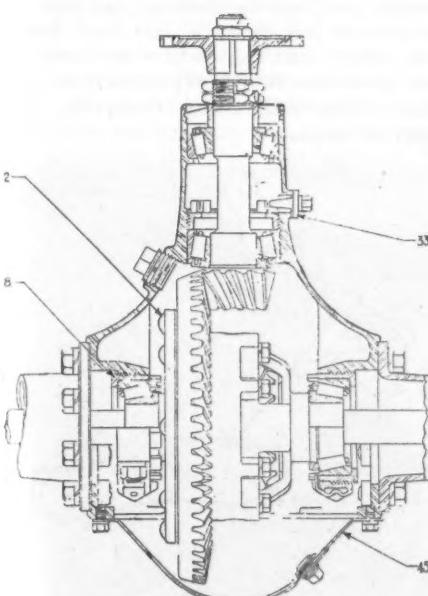


Fig. 10. Sectional view of the Nash rear axle assembly showing points of adjustment

# The Accessory Showcase

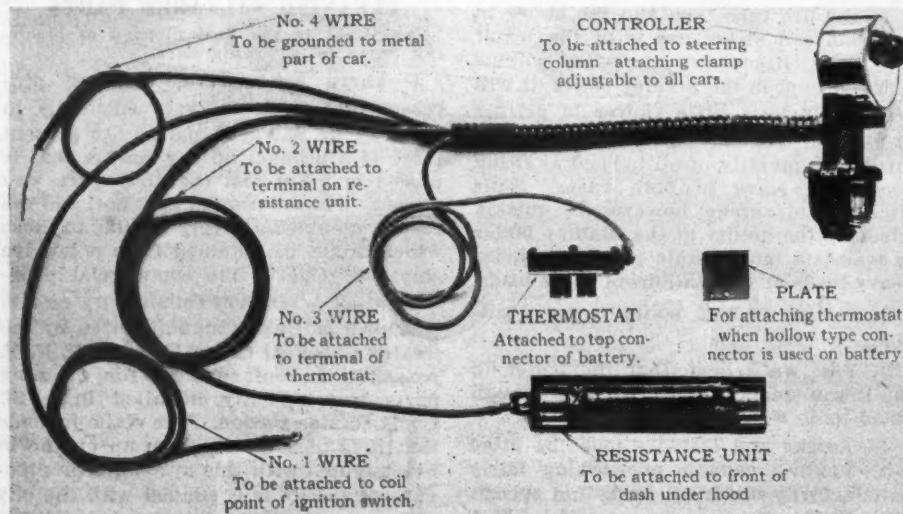
## New Fitments for the Car

### Rescue Battery Temperature Controller

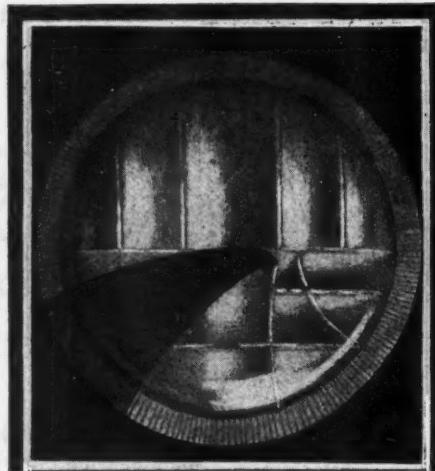
A simple and effective device has been perfected, designed to guard against and eliminate a great many battery troubles, such as overheating, dry batteries, overcharging, etc. This device, which is not much larger than a watch, is attached to the steering column, just below the steering wheel. When danger develops in the battery, a small red light flashes in sight. Then by the movement of a switch, the remedy is applied.

The device is comprised of three units: First, the indicator and controller switch, equipped with a red thermostat light, and a green resistance light. The controller is mounted on the steering column just below the wheel, in plain sight of the driver, and is attached by a universal clamp which fits any size steering column.

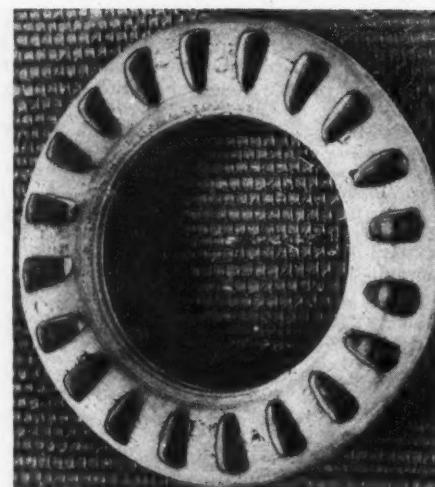
Second, a resistance unit, which is mounted on the dash under the hood and instantly attached by two screws, or small bolts if on a metal dash. Third, a thermostat, which attaches to a top connector on the storage battery, held in place by a lead plated spring clamp, attached, or detached in five seconds. The thermostat and top connector is protected against radiation by a wrapping of asbestos. The Rescue controller is made for all standard 6 and 12 volt starting and lighting systems. The complete device consists of the indicator, which mounts on the steering column, the resistance unit, which mounts underneath the hood and the thermostat which is attached to the top of the battery. The Auto Accessory Engineering Co., 6605 Detroit Avenue, Cleveland, Ohio.



Rescue battery temperature controller



Wing lens



Sitka tire core

### Marvel Shock Absorber

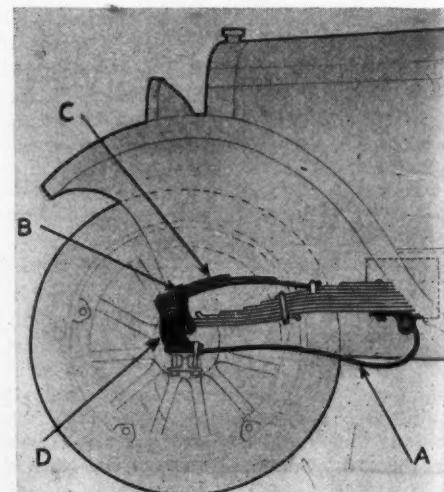
The new Marvel shock absorber is designed for cars having cantilever springs. The exclusive feature claimed for this shock absorber is the fact that a vertical or up and down resilience is produced and in addition they cushion longitudinal or head-on thrusts due to the slight slipping action of the main cantilever springs of the car within the pendulum hangers. A complete set of Marvel shock absorbers, front and rear for the Chevrolet sells for \$35. Other cars to which they are applicable are Buick, Dort, Mitchell, Haynes, Saxon and Paige. Marvel Shock Absorber Corp., 5620 Carnegie Avenue, Cleveland.

### Wing Lens

The Wing lens is claimed to be absolutely glareless even where high powered lamps are used. A medium shaft light or flare light may be had by focusing to suit. The ribs break up the dark spot of the light shaft into a bright light. The main shaft of light is ahead, with enough side light allowed for seeing ditches. The dark corner is for the protection of other motorists, and being above the height of the headlamps does not interfere with the driving light. These lens are of dark green stained glass quadrant. Wing Co., St. Cloud, Minn.

### Sitka Tire Core

The Sitka tire core is constructed of a flexible grade of smoked sheet rubber and is moulded to fit inside any standard casing, and can be used on any rim. It is claimed this core will last from five to ten years, cannot puncture or blow out and prevents fabric separation on casings. The Sitka Tire Core Co., Des Moines, Iowa.



Marvel shock absorber

# Service Equipment

## Time Savers for the Shop

### Hauck Preheating Furnace

Successful welding depends not alone on the skill of the welder but also on the manner in which the material or job is prepared for welding. For small work, welders often resort to a make-shift arrangement at the risk of uneven heating. Proper preheating is one of the principal factors in reducing welding costs.

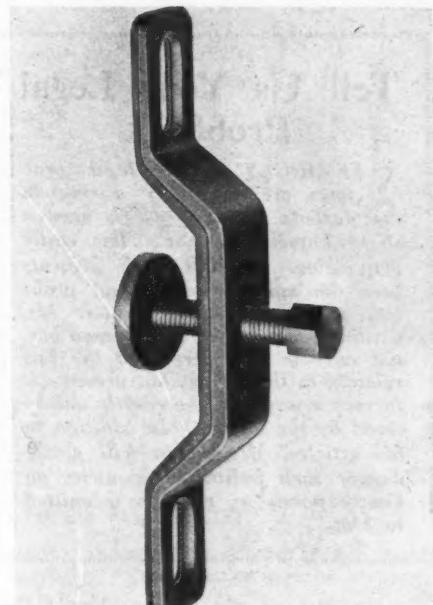
The Hauck preheating furnace has recently been placed on the market and is claimed to be a satisfactory and practical furnace for preheating. It consists of a deep box or oven, with detachable cover, mounted on a preheating table. The box will accommodate a block of six cylinders, and other small parts at the same time. Three sliding doors enable the operator to watch the work.

An asbestos lining retains the heat, and the oven can be used for reheating after welding. The burners can then be turned off and the castings allowed to cool gradually.

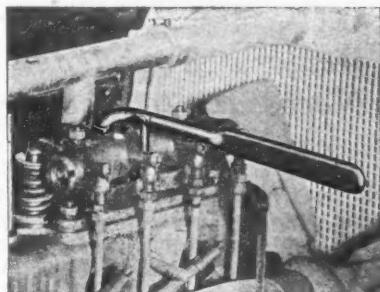
The furnace can be converted into a preheating table by removing the box and cover. The combustion chambers through which the flames of the kerosene preheating furnace burners travel, are lined with a patented type of refractory brick, which breaks the flame up into a number of small, soft, radiating flames.

The furnace, it is said, is especially suitable for welding gears, crankcases, and other parts with comparatively large areas and of intricate formation. The even heating prevents cracking, and avoids any possibility of unequal expansion.

The welder can slide the doors open and work, piece after piece; or, he can use a small welding table with fire-brick top, take out one job, weld it, replace it for reheating and then take another. He can take out a job, weld it, and put a

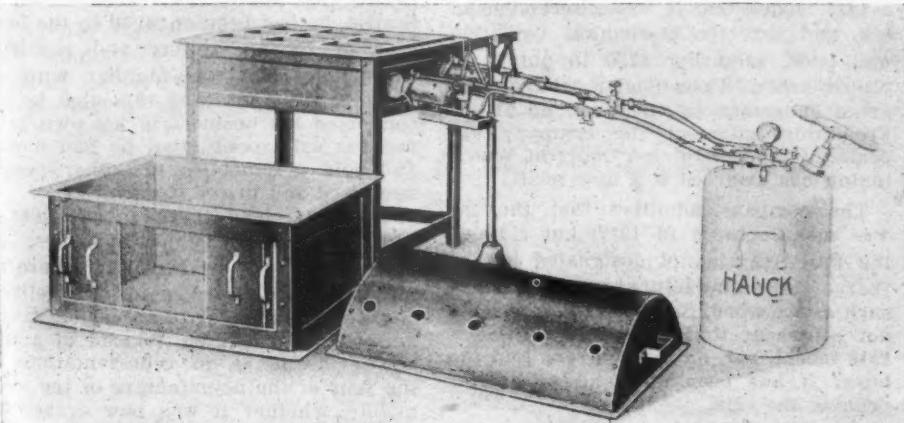


J. B. Buick wheel puller



Rocker arm lifter

keeping the work rotating. After all the new job in its place to be reheated, thus parts are welded, they are returned to the furnace and gradually allowed to cool. This welding outfit is made by the Hauck Mfg. Co., Brooklyn, N. Y.



Hauck preheating furnace

### Two New Time-Saving Tools

Among the new tools which have been brought out expressly for cutting down the time required in the performance of everyday jobs in the repair shop are two new products just placed on the market by the J & B Mfg. Co., of Pittsfield, Mass. The first of these is a rocker arm lifter, designed particularly for use on Buick cars and in conjunction with the valve cage remover brought out a short time ago. The rocker arm lifter consists of a drop forged handle with a hook securely fastened to it, and is used to lift the rocker arm of the ball end of the push rod, to allow the push rod to be sprung out of place and the rocker arm to be revolved about its axis and away from the valve stem which gives free access to the valve spring and cage. The retail price of this tool is \$2.50.

### Wheel Puller

The other new J & B tool is the Buick wheel puller, for removing wheels from free full-floating type axle tubes, after the flange nuts and driving flange are removed. The wheel puller is placed in position over two opposite driving studs and held in place by using two of the regular flanged nuts. The central screw of the puller is then turned so that the

### Besco Portable Service Kit

A portable tool box for use in the battery service station has been designed by the Battery Equipment & Supply Co., 1400 Michigan Avenue, Chicago. This service kit has a place for the following: Rubber jar to contain distilled water; hydrometer to slip in; screws, nuts, etc., in a sliding tray with three compartments; miscellaneous service tools. It is made of heavy sheet steel electrically welded and finished in black baked enamel. The dimensions are 22 in. long by 6½ in. wide, and 12 in. high, and it sells for \$6.15.



Battery service kit

# Law in Your Business



By Wellington Gustin

## Contracts Construed Under Uniform Sales Act

THE United States Circuit Court of Appeals in affirming judgment against the Miami Cycle & Mfg. Co., has announced some important principles of sales contract under the Uniform Sales Act in force in Ohio and other states.

The National Carbon Co. contracted to manufacture and sell to the Miami company 2500 mechanical self-starters for use in connection with the motorcycles manufactured by the latter. About half of these had been delivered and most of the purchase price paid, when the buyer refused to proceed with the contract, claiming the self-starters were not in accordance with the order, but were worthless, and demanded a return of what it had paid, and damages. The seller sued for the balance of the purchase price of those delivered, and damages on those the buyer refused to take. Upon a trial the seller was given judgment for the amount of its claim.

The court held the buyer was not justified in refusing to accept further deliveries under the contract on the ground that they were not like the sample approved before the contract was made, where the principal difference was that the sample was made by hand, the seller not having made starters previously for motorcycles, while the articles delivered were machine-made as must have been contemplated by the contract, and further where a sample of the latter was also submitted before deliveries began, and the buyer accepted and paid for several hundred.

### CORRESPONDENCE BEFORE CONTRACT NOT EVIDENCE

Again, the court said that a warranty cannot be imported into a written contract of sale which is silent on the subject by conversations or correspondence between the parties before the contract was made.

The seller was a manufacturer of self-starters for automobiles and motorboats and made a model for a new self-starter as desired by the buyer. After alteration this model was agreed upon, was approved by the buyer after a test of some weeks, and a contract made for several hundred. Here the court said there was no implied warranty under the uniform sales act of Ohio of general fitness for the use intended, or beyond a warranty of suitable materials and proper workmanship.

## Tell Us Your Legal Problems

**S**EEMINGLY knotty legal problems are constantly arising in the dealer's business, which even a slight knowledge of the law easily may solve. MOTOR AGE presents here the most common legal problems which confront the dealer. Mr. Gustin, a member of the Chicago bar, not only is well versed in the law relating to the dealer, but presents it in such a way as to be readily understood by the layman. In addition to his articles, Mr. Gustin will gladly answer such individual inquiries on knotty points as may be submitted to him.

As to damages recoverable by seller for buyer's breach, where the buyer, for whom the article was specially manu-



factured, repudiated the contract, the seller was properly allowed to recover the full contract price of the articles delivered and as to those not delivered, the contract price, less the cost of completion, and less the value of the finished starters and of the unused materials, all as left on seller's hands.

### Recovery of Lost Profits

Again, the lost profits may be recovered for refusal to accept goods to be specially manufactured, the same as if the contract of sale had been fully performed. This is the settled rule and is not changed by the Uniform Sales Act. It was contended that lost profits should be treated only as an element of the situation to be given such value as the jury or court might think proper. However, their profits may not be valued by the whims of the court or jury.

## Dealer's Knowledge of Intent to Defraud Not Necessary to Recovery by Buyer of Automobile

**I**N the suit of the Great Western Motors, Inc. of Seattle, Wash. against the purchaser of an automobile, the company sold a well known make car under a conditional bill of sale contract. After making several payments the buyer refused to make other payments and the company replevined the car, alleging failure to pay and forfeiture under the conditional sale.

The purchaser alleged he bought the car upon representations that it was new, a 1918 model, and in excellent mechanical condition, that the representations were false and fraudulent in that it was a 1917 model, that it was a second hand car, and that the mechanical condition was poor, requiring \$220 to put it in proper order. Upon trial the buyer was given judgment in the sum of \$1,493. From this judgment the company appealed and the Supreme Court of Washington has awarded it a new trial.

The company admitted that the car was manufactured in 1917, but claimed the Paige car is not designated by the year of its manufacture, but by a name such as Linwood, Stratford, etc., and did not represent that the car sold was a 1918 model, but, on the contrary told the buyer it has been on hand all winter prior to the sale.

The court pointed out that had the company's sales agent candidly mistaken the year of the manufacture of the

car, and that it was new or unused, and nevertheless misled the buyer in those respects in making the sale, the damage would have been the same as though the buyer has been misled purposely with intent to defraud. The element of knowledge or intent to defraud on the seller's part is not essential to recovery by the buyer in this kind of a case.

### Expert Testimony on Car Values

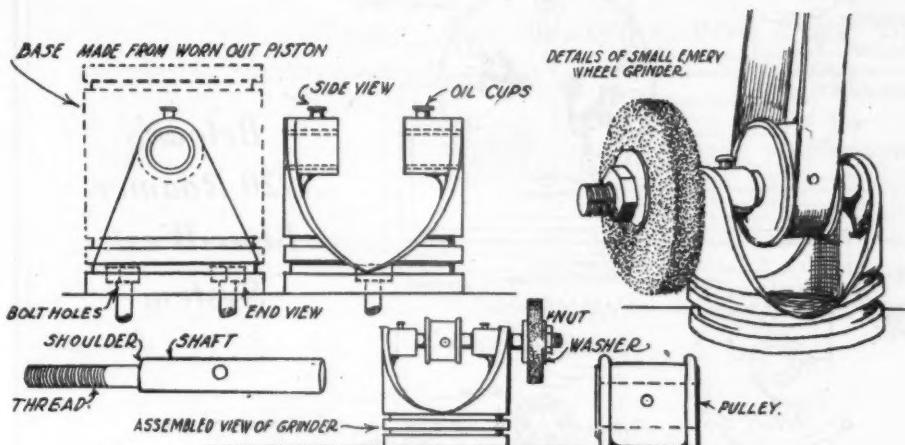
In establishing the values of 1917 and 1918 Paige cars a witness was challenged as not qualifying as an expert in these matters. The witness testified that for twenty-two years, the last fourteen in Seattle, he had been engaged in the business of buying, selling and repairing automobiles and was familiar with the Paige cars for 1917 and 1918, that he had conducted his business in his own independent salesrooms, that he had bought and sold automobiles for other people, appraised and priced them.

The court held this was sufficient to qualify him on the subject of values.

Further, the court held that where the buyer claimed damages for the delivery of a second-hand car of an earlier model, not in good condition, instead of a new car, evidence as to representations of the year of the manufacture of the automobile, whether it was new or second-hand, and its mechanical condition, were questions of fact to be determined by the jury in the trial.

# The Automotive Repair Shop

## Practical Maintenance Hints



### Small Emery Wheel Grinder

A N inexpensive emery wheel grinder can be made up for use in the garage, following the details as shown in the sketch.

The base and bearings for this grinder are made from a discarded gas engine piston, with the skirt section cut away as indicated.

A small fan pulley (another part which can usually be secured from scrap parts) is mounted between the bearings for the wrist pin.

A shaft is fixed to the pulley and bears in the sides. On the extended end of the shaft a shoulder is turned and this part is threaded for two washers and nuts used for attaching the wheel. The fixture is attached to the bench by means of two bolts through the head of the piston. For oiling the shaft bearings two small drilled holes are made at the center of each side of the shaft bearing into which small oil cups can be placed.

### To Clean Commutator

It is difficult to get at commutators as a rule due to the small opening at the commutator end of a generator or starting motor. This requires that some simple tool be made to get the commu-

tator through one of the brush holder openings. The easiest way to do this is to take the cover of a cigar box or some thin wood stock and make a small paddle about 4 or 6 in. long and about half the width of the brush holder.

To use this simple arrangement for cleaning generator commutators first remove the most accessible generator brush and then wrap a strip of No. 00 sandpaper over the end of the paddle and use it through the brush holder when the engine is running as one would use a hand lathe tool. This will thoroughly clean the commutator and do it evenly. Under no circumstances use emery cloth on electrical cloth, as emery is a conductor and will short the commutator. Shorted armature windings on most machines will make themselves known by turning the segments of the armature a blue color. One shorted winding will make two segments 180 deg. apart or one-half way around the commutator change color.

A starting motor will run under battery power when one of the brushes is removed, hence the cleaning of the starting motor commutator can be done when the motor is driving the engine. A dirty motor commutator causes arcing and heating. This is also true if

the contact faces of the brushes are cut and not smooth. If this condition is found, it is best to smooth the faces of the brushes, as they will cut the commutator so badly in a short time that it will have to be refaced by taking a cut off of it in a lathe.

### Holding the Inaccessible Bolt Head

The need of a machine bolt or a method of holding the bolt head while the nut is being twisted on or off, will continue to worry the mechanic until some manufacturer produces a bolt the equal or better than a carriage bolt with the square shank under the bolt head, suitable for automobile parts. Chassis and body bolts require a separate wrench and frequently an assistant to hold the bolt head. Improvised methods to offset these troubles are depicted in the sketch, which are serviceable with present methods.

One method is to place a split washer under the head or the bolt. The upturned edges of the split washer will bind the bolt sufficiently to prevent the bolt turning with the nut; however, the trouble most frequently is the removal of bolts, especially when rusted or stuck. A pair of pliers will hold the bolt head or a separate socket wrench is of use if a helper is available. A means of dispensing with the helper is to place a bolt through the handles of a pair of adjustable pliers with a wing nut to tighten down on the bolt head.

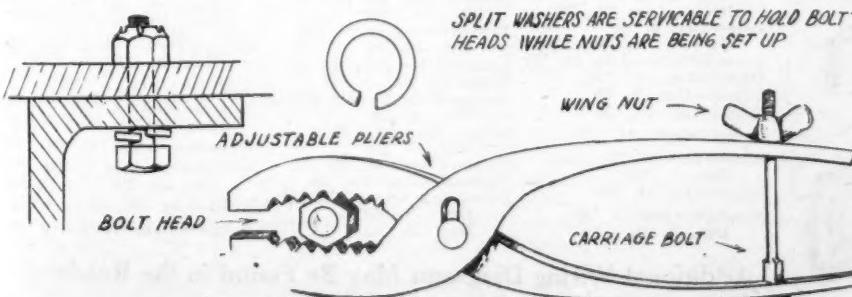
### Brass Wire

A few years ago brass wire, flat on one side and oval on the other, was used to wrap ignition cable instead of running the cable through a flexible tube. Some of this wire is still to be found on the market and almost any repairshop probably has a little, that has been removed from a car, still on hand.

This brass wire has great tensile strength and is used for many purposes, such as wrapping hose, wrapping fuel lines and soldering and even for fuze wire. If a repairman happens to come across any of this kind of cable, he will find it to his advantage to lay it aside for future use, and this use will come many times in a year.

### Speedometer Shaft

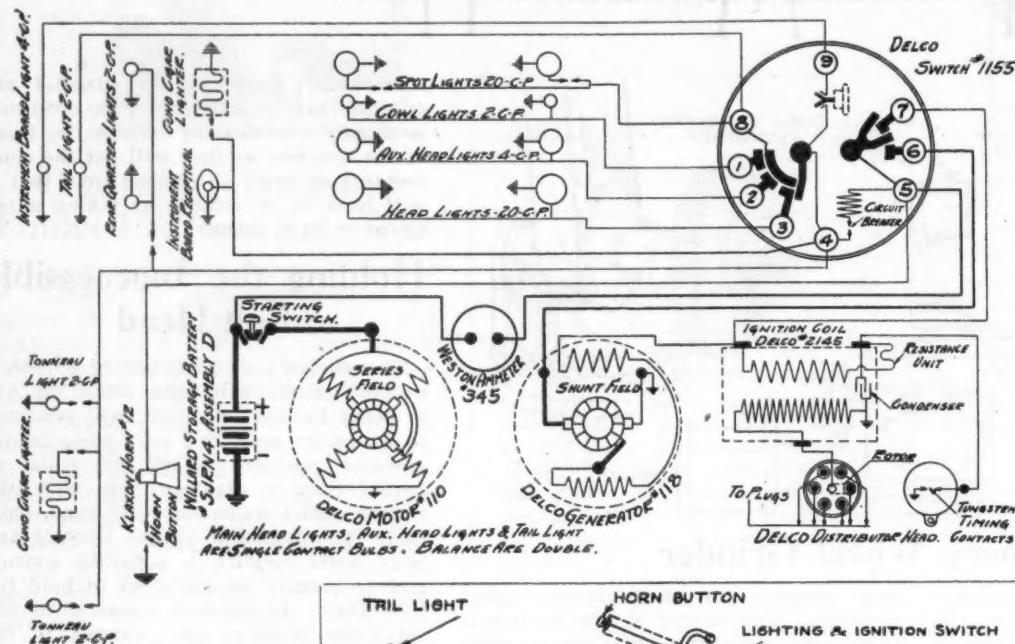
A cowl squeak often may be traced to a speedometer shaft, which needs lubrication. If this is found to be the case, it should not be neglected an instant longer than necessary, because of danger of the shaft breaking. Vaseline or a heavy soft grease should be used in repacking.



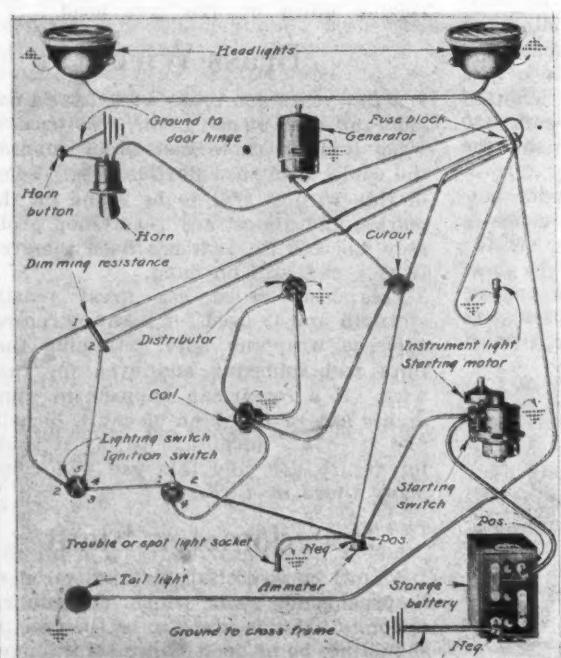
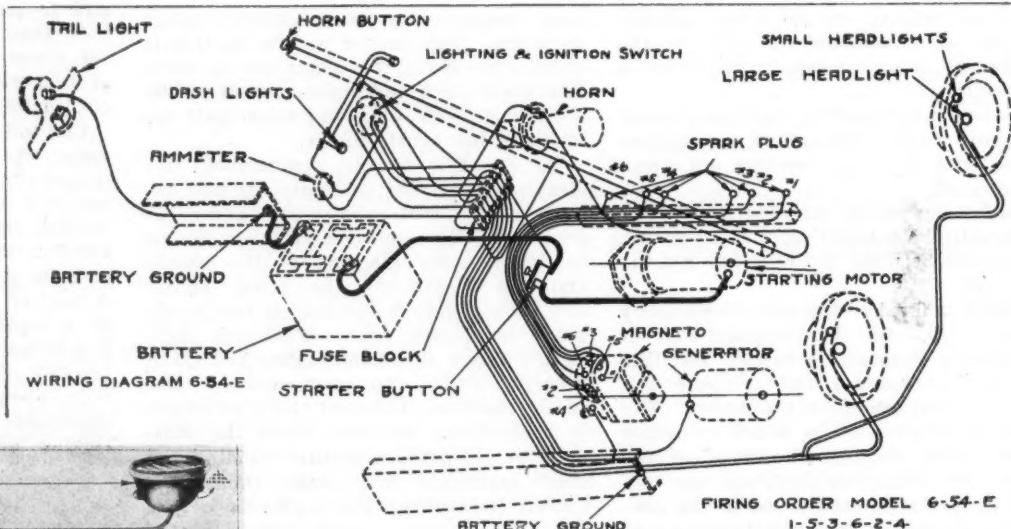
A pair of pliers with carriage bolt and wing nut can be made to retain the bolt while twisting off the stock nut

# Motor Age Weekly Wiring Chart No. 115

1920 Premier—Delco System



*Below:  
Reo—  
North East  
System*



Name of Car and Date on Which Wiring Diagrams Have Appeared in Previous Issues

Allen—June 17, '20	Grant—Aug. 12, '20	Packard—Oct. 7, '20
Sept. 30, '20	Nov. 23, '20	Peerless—Nov. 18, '20
Auburn—Sept. 9, '20	Harroun—July 15, '20	Pierce-Arrow—July 15, '20
Apperson—Aug. 5, '20	Haynes—June 24, '20	
Buick—July 15, '20	Hudson—Jan. 13, '21	Reo—July 22, '20
Dec. 23, '20	Hupmobile—Feb. 3, '21	Roamer—Aug. 5, '20
Cadillac—Nov. 18, '20	Jordan—June 10, '20	Sept. 30, '20
Case—Aug. 5, '20	July 22, '20	Dec. 30, '20
Oct. 7, '20	Kissel—Aug. 19, '20	Saxon—Sept. 9, '20
Chalmers—June 17, '20	Oct. 21, '20	Oct. 21, '20
Jan. 6, '21; Jan. 20, '21	Lexington—July 29, '20	Dec. 30, '20
Cole—Dec. 9, '20	Dec. 16, '20	Scripps-Booth—Aug. 26, '20
Crow-Elkhart—July 29, '20	Locomobile—June 3, '20	Feb. 3, '21
Davis—Aug. 12, '20	Mitchell—Jan. 6, '21	Sheridan—Feb. 3, '21
Dorris—Dec. 9, '20	Moline-Knight—July 22, '20	Stearns—Nov. 4, '20
Dort—Aug. 12, '20	Nov. 4, '20	Jan. 13, '21
Dodge—Sept. 23, '20	Moon—July 29, '20	Stephens—Sept. 16, '20
Elcar—Oct. 28, '20	Aug. 19, '20	Studebaker—July 1, '20
Dec. 2, '20	Moore—Nov. 11, '20	Oct. 28, '20
Elgin—Oct. 14, '20	National—Dec. 16, '20	Velie—Jan. 20, '21
Franklin—June 3, '20	Oldsmobile—Sept. 16, '20	Willys-Knight—Oct. 14, '20
Dec. 2, '20	Nov. 25, '20	
	Dec. 23, '20	

Additional Wiring Diagrams May Be Found in the Readers' Clearing House in This Issue

# Windshield Glass Sizes *FOR PASSENGER CARS—Sedan Models*

*Motor Age Maintenance Data Sheet No. 136*

One of a series of weekly pages of information valuable to service men and dealers—save this page

The windshield glass sizes for coupes will be published in the next issue of MOTOR AGE

# COMING MOTOR EVENTS

## Automobile Shows

Rockford, Ill.	Annual Automobile Show	February	St. Joseph, Mo.	Automobile Show	Feb. 28-March 5
Madison, Wis.	Annual Automobile Show	February	Muskegon, Mich.	Automobile Show	Feb. 28-March 5
Roanoke, Va.	Annual Automobile Show	February	Duluth, Minn.	Annual Automobile Show	Feb. 28-March 5
Paterson, N. J.	Annual Automobile Show	February	Portland, Me.	Annual Automobile Show	Feb. 28-March 5
Tampa, Fla.	Annual Automobile Show	Feb. 3-12	Columbia, S. C.	Annual Automobile Show	March
Minneapolis	Annual Automobile Show	Feb. 5-12	Quincy, Ill.	Automobile Show	1-5
Newberg, N. Y.	Annual Automobile Show	Feb. 6-12	Wilmington, Del.	Automobile Show	March 1-5
St. Louis	Passenger Car Show	Feb. 7-12	Wichita, Kan.	Annual Automobile Show	March 1-5
Bridgeport, Conn.	Annual Automobile Show	Feb. 7-12	Des Moines	Open Car Show	March 2-5
Rochester, N. Y.	Passenger Car Show	Feb. 7-12	Brooklyn	Automobile Show	March 5-12
Reading, Pa.	Automobile Show	Feb. 7-12	Atlanta	Automobile Show	March 5-12
Yonkers, N. Y.	Automobile Show	Feb. 7-12	New Haven, Conn.	Annual Automobile Show	March 5-12
Tulsa, Okla.	Automobile Show	Feb. 7-12	Pittsburgh, Pa.	Annual Automobile Show	March 5-12
Schenectady, N. Y.	Annual Automobile Show	Feb. 7-12	Des Moines	Enclosed Car Show	March 7-10
Bucyrus, Ohio	Crawford County Automobile Show	Feb. 9-12	Indianapolis	Automobile Show	March 7-12
Hartford, Conn.	Annual Automobile Show	Feb. 12-19	Springfield, Mass.	Annual Automobile Show	March 7-12
Kansas City, Mo.	Annual Automobile Show	Feb. 12-19	Scranton, Pa.	Passenger Car Show	March 7-12
Fitchburg, Mass.	Automobile Show	Feb. 12-19	Syracuse, N. Y.	Annual Automobile Show	March 7-12
Winnipeg	Western Can. Automotive Equip Show	Feb. 14-19	Pendleton, Ore.	Annual Automobile Show	March 10-12
Holyoke, Mass.	Automobile Show	Feb. 14-19	Richmond, Va.	Automobile Show	March 12-19
Sioux City, Iowa	Automotive and Accessory Show	Feb. 14-19	Newark, N. J.	Automobile Show	March 12-19
Worcester, Mass.	Annual Automobile Show	Feb. 14-19	Boston, Mass.	Annual Show	March 12-19
Charleston, W. Va.	Annual Automobile Show	Feb. 14-20	Omaha, Neb.	Annual Automobile Show	March 14-19
Trenton, N. J.	Annual Automobile Show	Feb. 16-19	Greenville, S. C.	Automobile Show	March 16-19
Ottawa, Ill.	Automobile, Truck and Tractor Show	Feb. 17-19	Torrington, Conn.	Annual Automobile Show	March 20-26
Streator, Ill.	Annual Automobile Show	Feb. 17-19	Chattanooga, Tenn.	Annual Automobile Show	April
San Bernardino, Cal.	Annual Automobile Show	Feb. 18-28	Charlotte, N. C.	Annual Automobile Show	April 1
Albany, N. Y.	Annual Automobile Show	Feb. 19-26	Bridgeton, N. J.	Annual Automobile Show	April 2-9
San Francisco	Automobile Show	Feb. 19-26	Gloversville, N. Y.	Annual Automobile Show	April 3-9
Pittsfield, Mass.	Annual Automobile Show	Feb. 20-26	Seattle	Automobile Show	April 4-9
Grand Rapids, Mich.	Automobile Business Association	Feb. 21-26	Buffalo	First Ann'l Motors and Sportsmen's Show	April 11-16
Louisville, Ky.	Automobile Show	Feb. 21-26			
Deadwood, S. D.	Annual Automobile Show	Feb. 21-26			
Salt Lake City	Automobile Show	Feb. 21-26			
Paterson, N. J.	Annual Automobile Show	Feb. 21-26			
Elmira, N. Y.	Annual Automobile Show	Feb. 21-26			
Manchester, N. H.	Annual Automobile Show	Feb. 21-26			
Amarillo, Tex.	Annual Automobile Show	Feb. 22-24			
Poughkeepsie, N. Y.	Annual Automobile Show	Feb. 22-26			
Saginaw, Mich.	Annual Automobile Show	Feb. 22-26			
Galesburg, Ill.	Annual Automobile Show	Feb. 22-26			
Malone, N. Y.	Annual Automobile Show	Feb. 23-26			
Clinton, Iowa	Sixth Annual Automobile Show	Feb. 23-26			
Newton, Kan.	Annual Automobile Show	Feb. 23-26			
Bloomington, Ill.	Automobile and Tractor Show	Feb. 23-26			
Buffalo, N. Y.	Annual Automobile Show	Feb. 26-March 5			
Binghamton, N. Y.	Annual Show	Feb. 28-March 5			

## Business Notes

The General Motors Acceptance Corp. has opened an office in Portland, Oregon, in charge of J. F. Storey. This is operated as a sub-branch under direct control of the San Francisco branch of the corporation, and will do much to facilitate the extension of the corporation's facilities to General Motors dealers in Washington, Oregon and the "panhandle" of Idaho, which is the territory served by the new office.

The Armond Motor Co., organized and incorporated recently at Fayetteville, N. C., with an authorized capital stock of \$100,000, proposes the establishment of an automobile manufacturing plant in that city this year.

The Mid-West Motors Corp., which operated an automobile agency and garage in Davenport, Iowa, for many years, has increased its capital stock from \$300,000 to \$500,000 and will be known as the General Jobbing Co.

Upon the application of Louis N. Reif, a holder of a note for \$3,000 against the company, Judge Duncan has named J. H. Weisenback and Thomas W. Pickard receivers for the Phelps Manufacturing Co., Columbus, a manufacturer of wire wheels for automobiles. Mr. Pickard reports that operations are being continued under the orders of the court and that steps are being taken to lift the receivership by the stockholders of the company.

A meeting of the stockholders of the Immel Co., Columbus, manufacturer of automobile bodies, which is in the hands of Robert H. Schryer as receiver was held recently when a committee was named to raise funds to raise the receivership.

The Black & Decker Manufacturing Co. has established a new branch office and service station at 75 Fremont Street, San Francisco, Cal., which will have jurisdiction over the entire Pacific Coast territory and will be in charge of M. A. Johnson, well known in many cities on the Coast.

The Puritan Machine Co., Detroit, has purchased all service repair parts of the Moore Motor Vehicle Co. formerly manufactured at Danville, Ill., and has moved the entire stock

to its main plant from which point service repair parts will be distributed to Moore dealers and owners in the future.

The Roller-Smith Co., New York City, has appointed the J. E. Dilworth Co., Memphis, Tenn., as its representative in the western half of Tennessee, the eastern half of Arkansas and the northern half of Mississippi. The electrical department of this company is in charge of E. M.



Greeson, formerly associated with Fairbanks, Morse & Co., and the Sanborn Electric Co., both of Indianapolis.

Directors of the General Motors Corp. have accepted the resignation of W. C. Durant as a member of the finance committee and as a member and chairman of the executive committee. The executive committee has been designated as follows: P. S. du Pont, chairman; J. J. Raskob, J. A. Haskell and A. P. Sloan, Jr. The resignation has been accepted of F. W. Hohensee as a director, vice president and member of the executive committee. F. D. Brown has been elected a member of the finance committee; C. F. Kettering, a vice president and A. H. Swayne a director and vice president.

The Doss Rubber and Tube Co., tire manufacturer of Atlanta, has filed a petition requesting permission to amend its charter, increasing the capital stock to \$1,000,000. The new issue will be in preferred stock.

The No-Leak O Piston Ring Co., Baltimore, reports sales of nearly 1,000,000 rings the first half of January. One order called for a carload of its products at regular terms.

The Jefferson Rubber Co., which is erecting a new tire and rubber goods manufacturing plant at Jefferson, Wis., to be ready to commence production about Feb. 15, has made a return gift of \$15,000 in cash to the Jefferson Realty Co., which provided a bonus of \$25,000 four months ago to secure the industry for the city.

The Black & Decker Manufacturing Co. has increased its board of directors from five to seven by the election of Charles C. Homer, Jr., president of the Savings Bank of Baltimore, of the Second National Bank of Baltimore and of the Baltimore Clearing House Association and William G. Baker, Jr., of Baker-Watts & Co., Baltimore. The net sales of the company for 1920 were 40 per cent greater than in the previous year.

The Huron Truck Co. at the annual meeting of directors re-elected its present officers and directors. The officers are, President, F. W. Kindt; vice-president, W. R. Lyons; secretary, C. C. Henny; treasurer, Fred M. Gross. The board of directors consists of these officers and former Governor A. E. Sleeper, George L. Whitney, John G. Clark, Fred M. Gross and John Ryan.